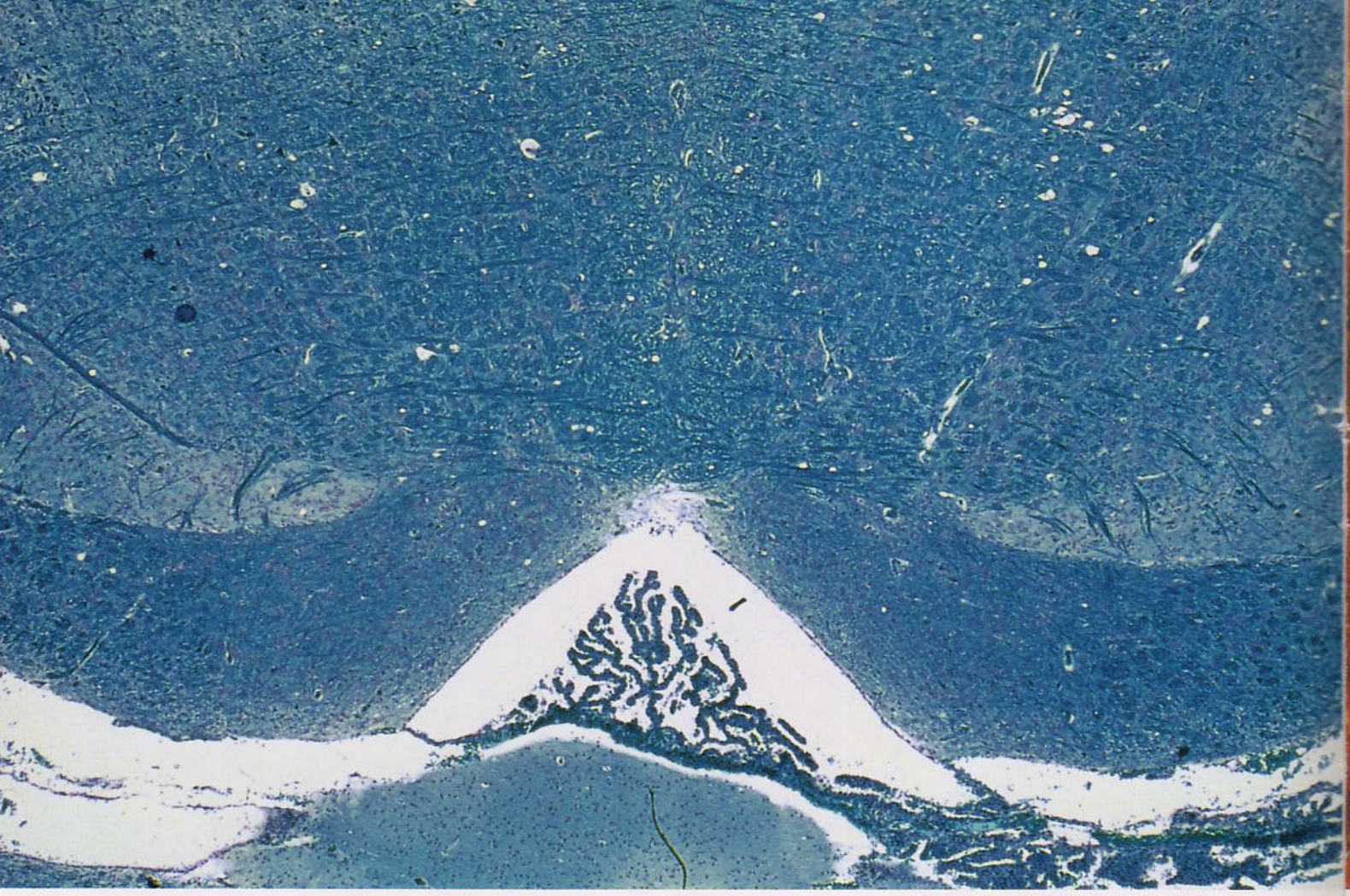
Nikon

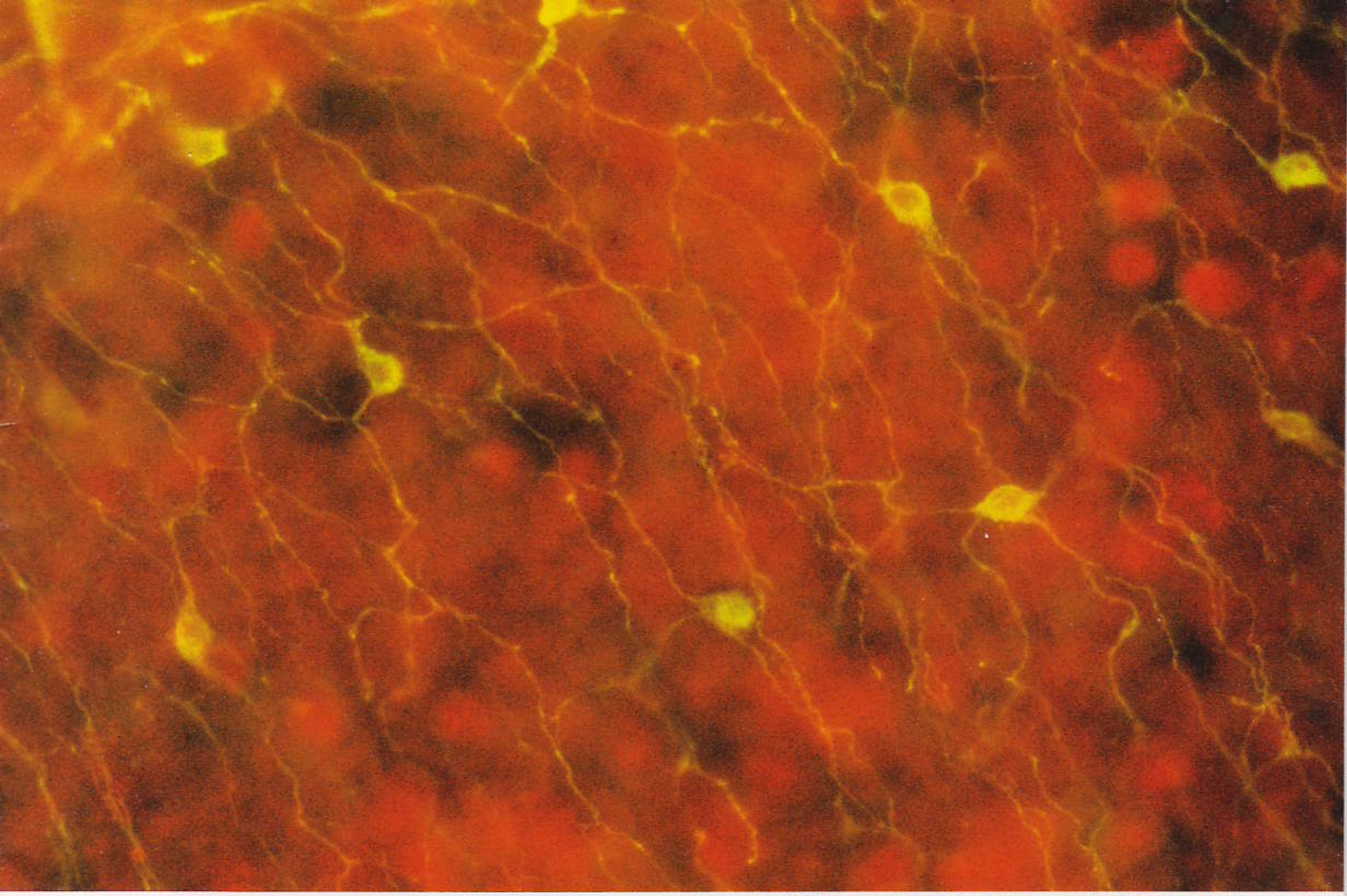
New CF LENSES



1. Brain (Mouse)/Brightfield/CF N Plan Apo 10×

For biomedical and polarizing applications

New CF LENSES

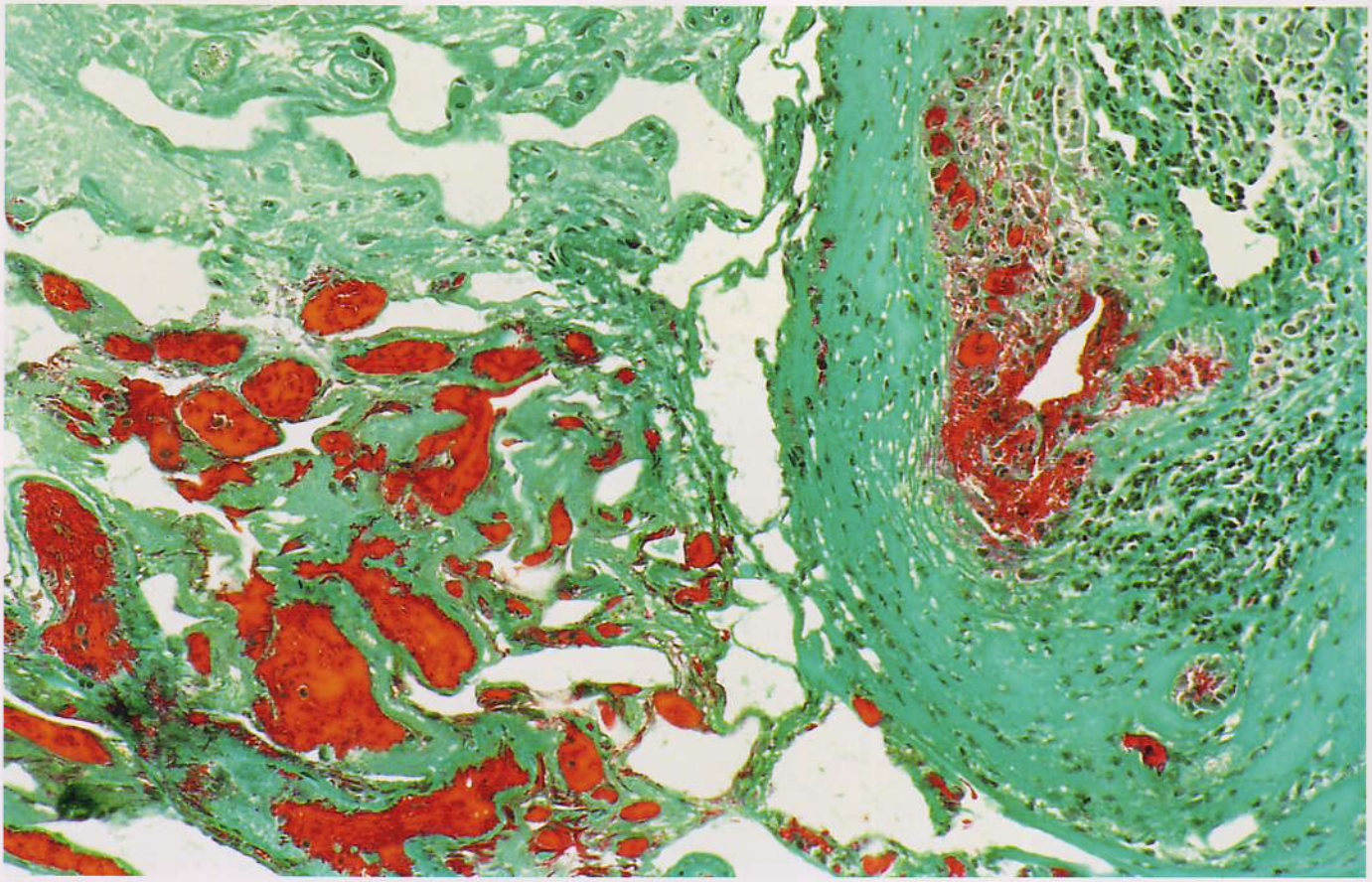


2. Nervous System of Hydra/B2 Excitation/40×/F.I.T.C. Staining

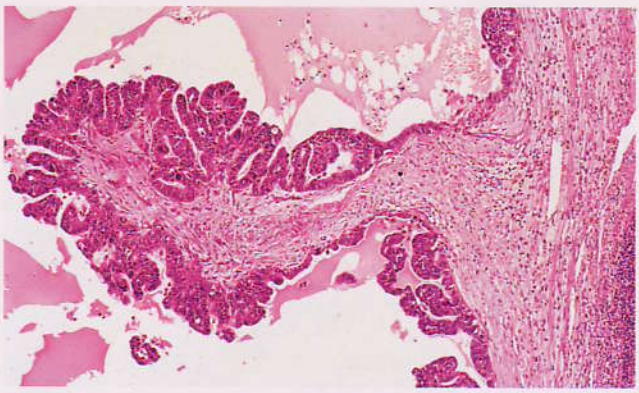
Nikon's unique CF lens design provides superb resolving power and exceptional image sharpness to assure the ultimate in microscopic observation and photography.

The unique performance of Nikon CF (chromatic-aberration-free) objectives is a result of Nikon's advanced technology in glass formulation and lens manufacture.

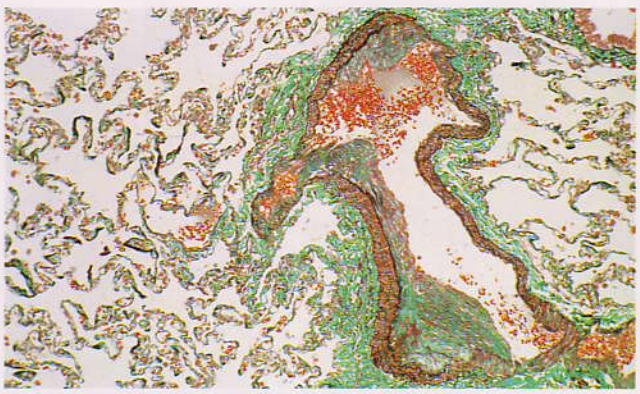
Nikon has pioneered multilayer anti-reflection coatings, computer aided lens design and unique extra-low-dispersion ED glasses with properties similar to fluorite materials. These advances have enabled the creation of new CF and CF N objective lenses with higher numerical apertures, longer working distances and the highest possible resolution and contrast.



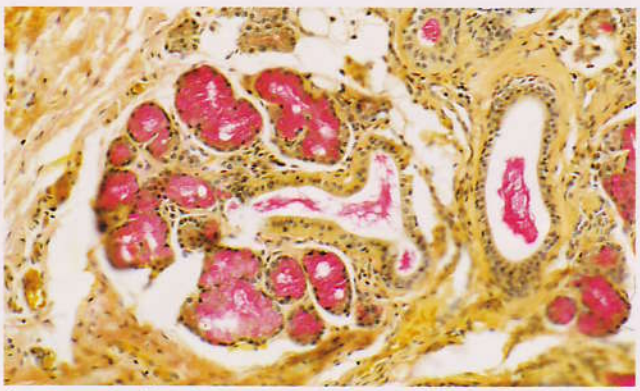
3. Arterio-Venous Malformation (Cerebrum)/Brightfield/CF N Plan Apo 20× /Triple Masson Staining



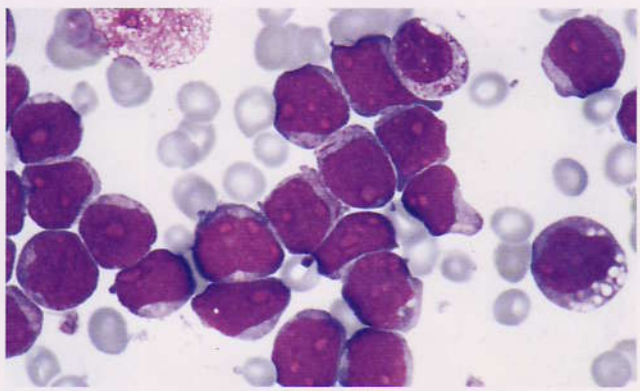
5. Papillary Cyst Adenocarcinoma (Ovary)/Brightfield/CF N Plan Apo 10× /H.E. Staining



7. Lung/CF N Plan Apo 10× /E-Masson Staining

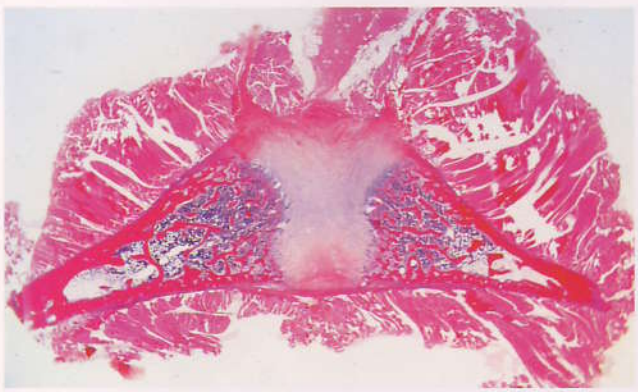


6. Salivary Gland/50× /Muci-Carmine Staining

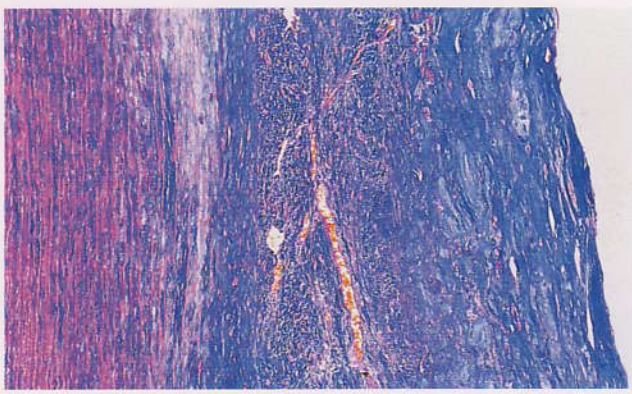


8. Bone Marrow (Acute Myelogenous Leukaemia)/Brightfield/Plan Apo 100× (Oil)/May-Grünwald-Giemsa Staining

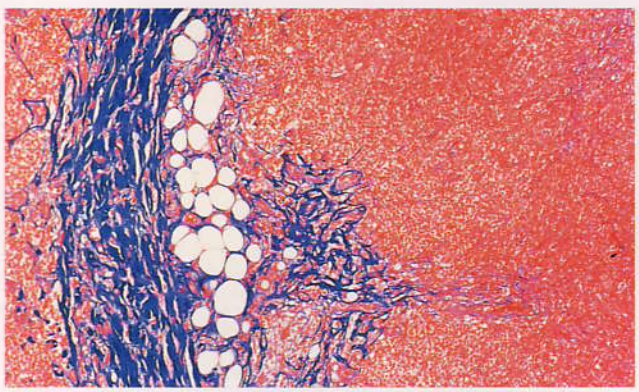
4. Carina Skin/100× (Oil)



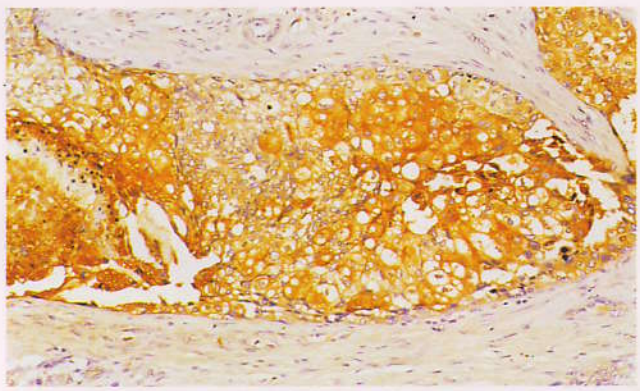
9. Fibro-Cartilage/1× (Intermediate magnification 2.5×)



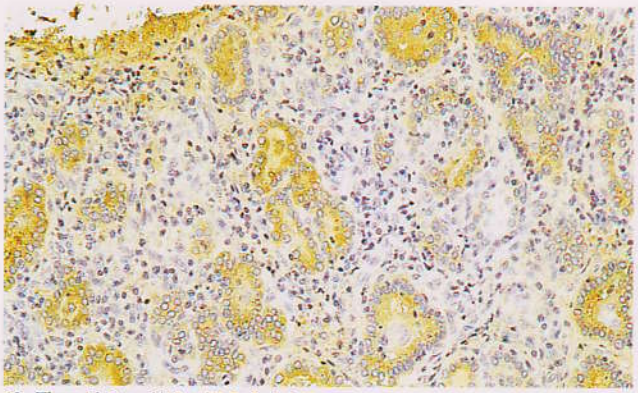
11. Aortal Arch Sclerosis/Diascopic Illumination/CF N Plan Apo 10×/ Azan-Mallory Staining



10. Malignant Lymphoma (Breast)/Brightfield/CF N Plan Apo 10×/ Azan Staining

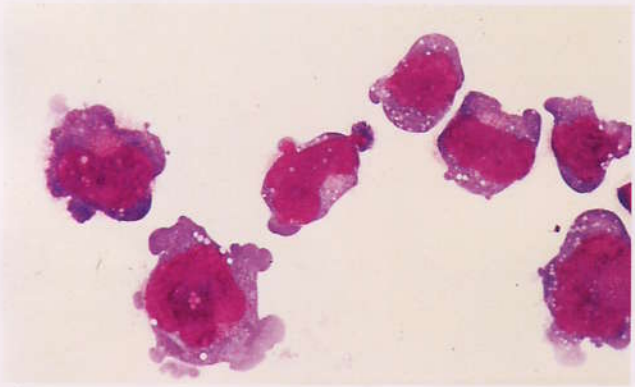


12. Mastocarcinoma (Breast)/Brightfield/CF N Plan Apo 10×/CEA Staining

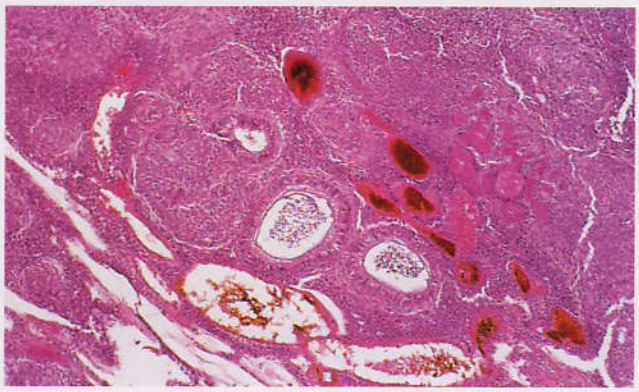


13. Thyroid Grand/10× /H.E. Staining

17. Chinese Paper/Double Arm Fiber Illumination/CF N Plan Apo 2×

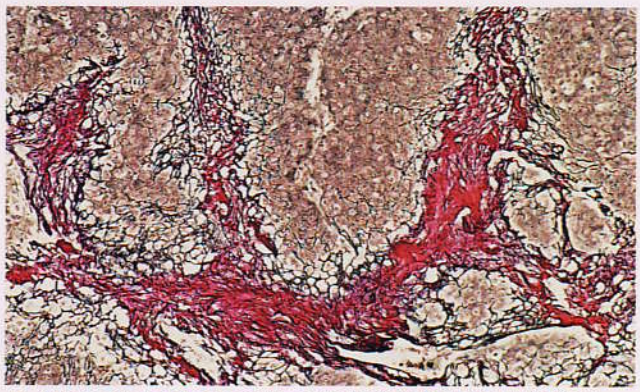


14. Human Monocytic Leukemia/Brightfield/CF N Plan Apo 100× (Oil)/ May-Grünwald-Giemsa Staining

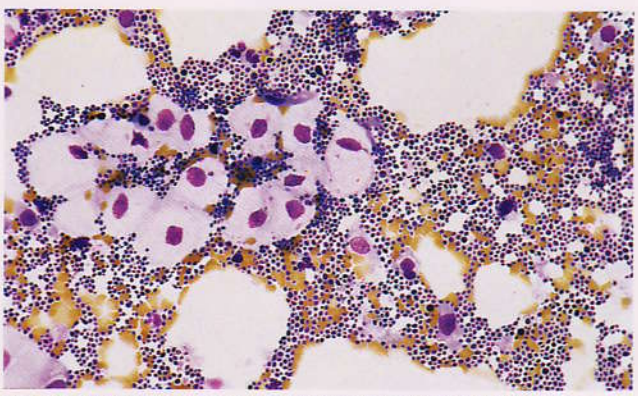


18. Adamantinoma/Diascopic Illumination/CF N Plan Apo 10× /H.E. Staining

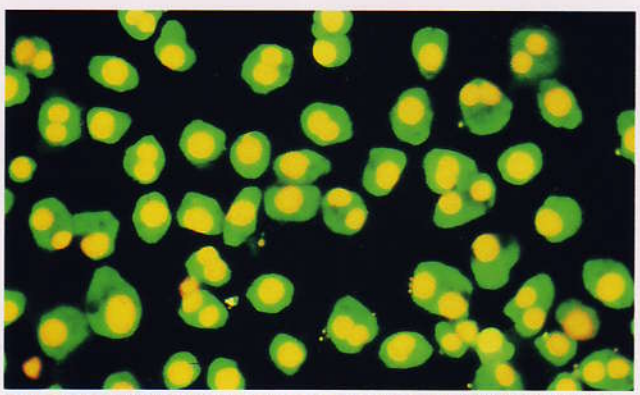
15. Echinococcus Granulosus/20×



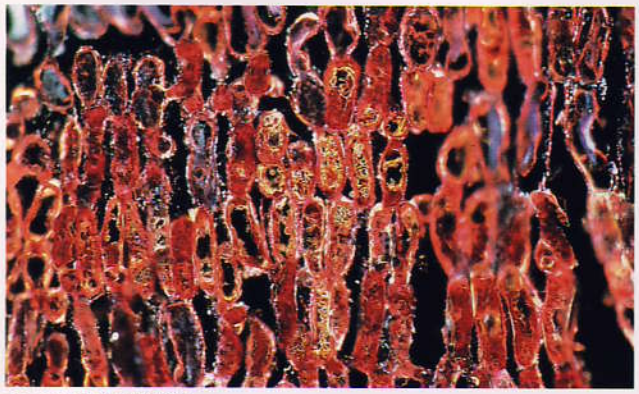
19. Gigantocellulare Carcinoma (Lung)/Brightfield/CF N Plan Apo 20× / Silver Metallization



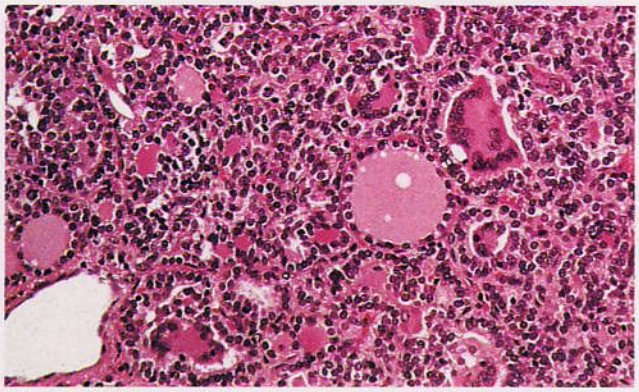
16. Yeast Fungus and Squamous Epithelium (Urine)/Brightfield/Plan Apo 40× /Giemsa Staining



20. Rat Liver Cell (Isolated)/Epi-Fluorescent Illumination/DI (DNA)-F.I.T.C. (Protein) Double Staining

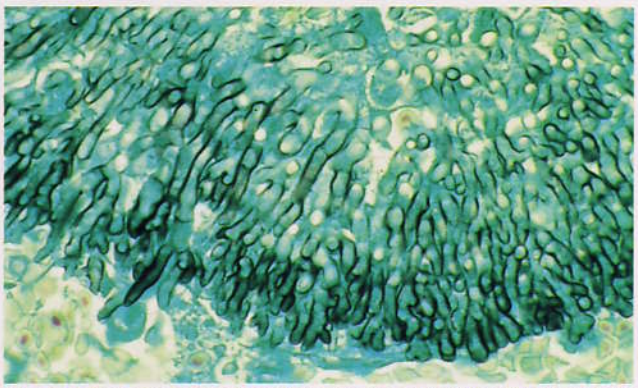


21. Stem Section/50×

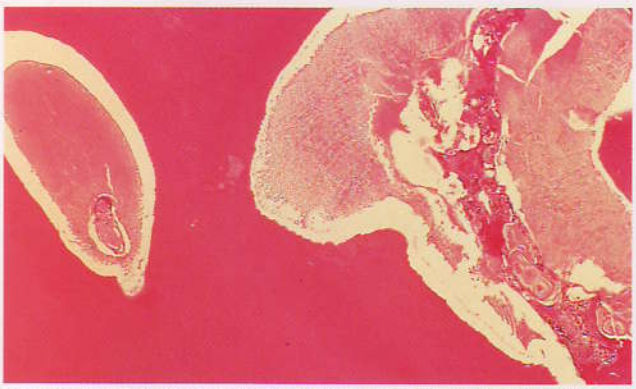


25. Thyroid Gland/10×/Chemical Staining of the ABC Immunotissue

22. Kidney/CF N Plan Apo 20×/Mesetomin Silver



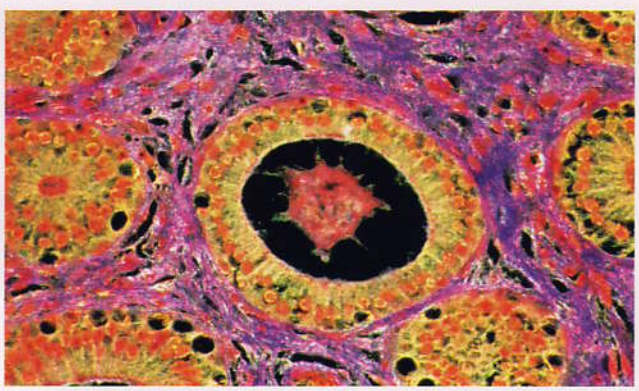
26. Aspergillus (Lung)/Brightfield/CF N Plan Apo 100× (Oil)/Grocott Staining



23. Complicated Odontoma/Diascopic Illumination/CF N Plan Apo 10×

27. Collotheca Cornuta (Dobie)/20×

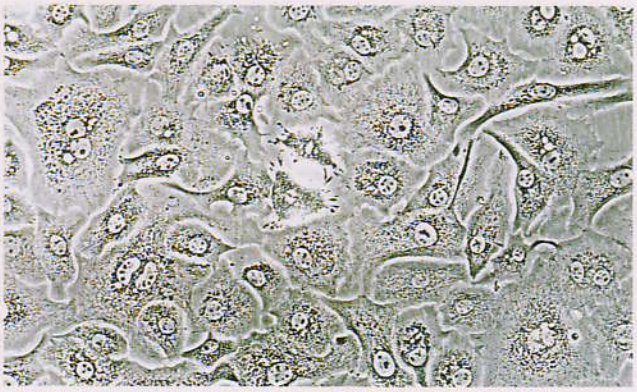
24. Introduce of a Human Monochromosome to Mouse Aq Cell by Microcelluler Method (Pointed)/UV Excitation/100×/Quinacrine-Hexite Complicated Staining



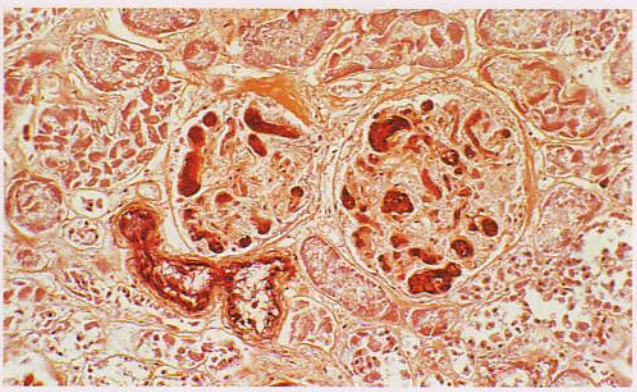
28. Ampulla of Bull/100× (Oil)

29. Division of a Grasshopper's Spermiocyte/CF N Plan Apo 60× /Tubulline Antibody Staining Marked by Colloidal Gold

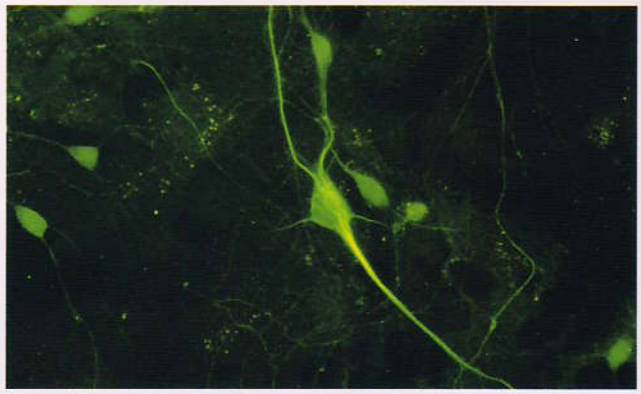
30. Alveolar Soft Part Sarcoma/CF N Plan Apo 100× (Oil)/PAS Staining



31. First Generation Incuvation of a Rat Liver Cell/CF N Plan DL 10×

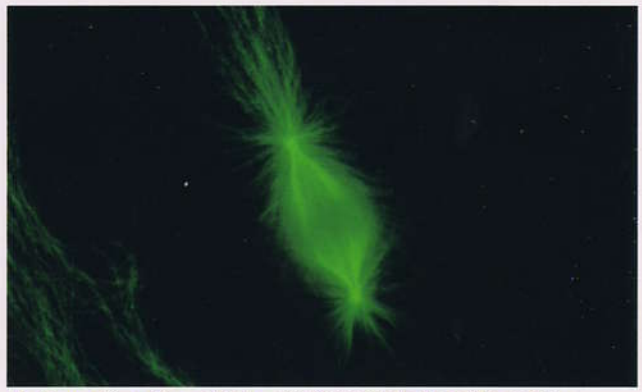


32. Kidney/CF N Plan Apo 20× /PTAH Staining

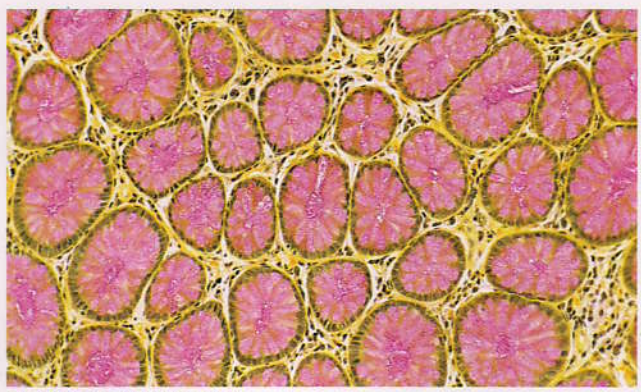


33. First Generation Incuvation of a Rat's Embryocranial Cell/B Excitation/ 20× /Immunotissue Chemical Staining With Neurofilament Antibody

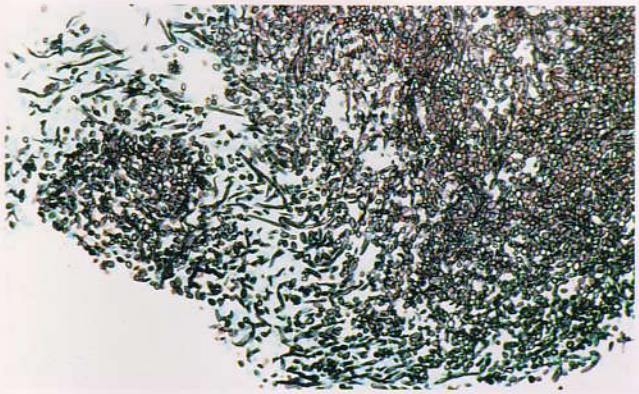
34. Nauplius/20×



35. Human Liver Tissue HB Hepatitis/20× /Hbs Antigen CEA Staining

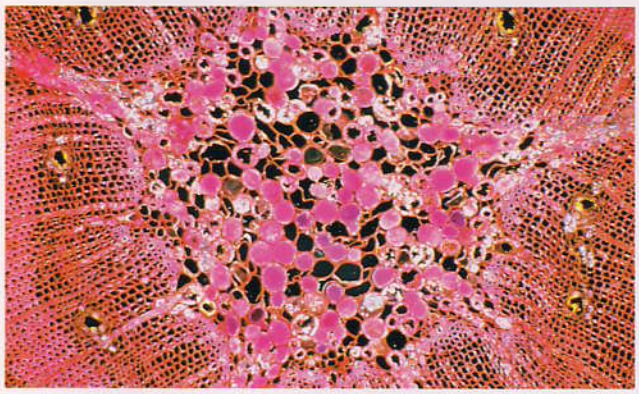


36. Goblet Cells/100× (Oil)



37. Candidiasis (Cerebral)/Brightfield/CF N Plan Apo 40×/Groccot Staining

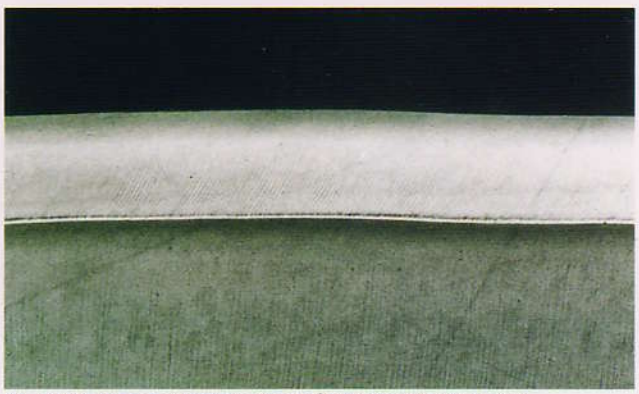
41. Monkey Testis/100×



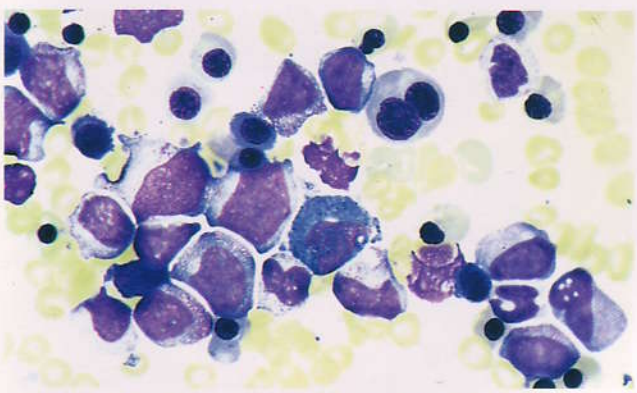
38. Pinus Sten (Darkfield)/10× (Intermediate magnification 2.5×)

42. Monkey Tooth/Brightfield/CF N Plan 1×

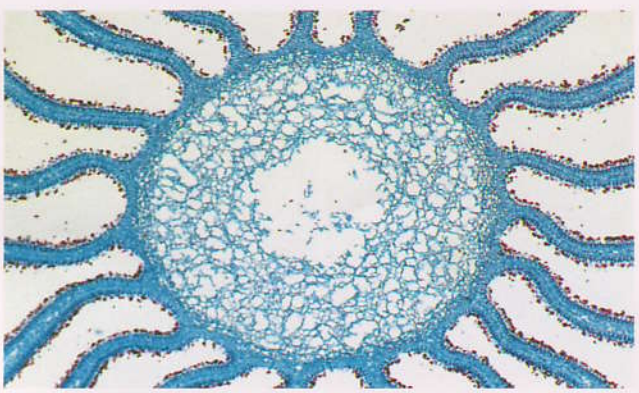
39. Human Astrocytoma/B Excitation/20×/Immunotissue Chemical Staining With Glial Fibrillary Acidix Protein (GFAP) Antibody



43. Rat's Substantia Adamantina/Brightfield/CF N Plan Apo 10×

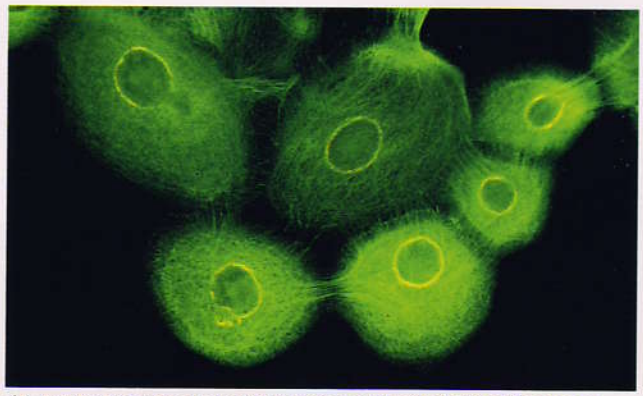


40. Cerebro-Spinal Fluid Smear (Bone Marrow Dysplasia Syndrome)/ Brightfield/CF Plan Apo 100× (Oil)/May-Grunwald-Giemsa Staining

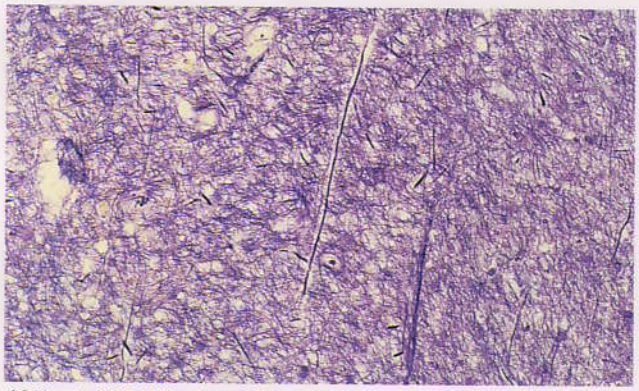


44. Coprinus Mushroom/10× (Intermediate magnification 2.5×)

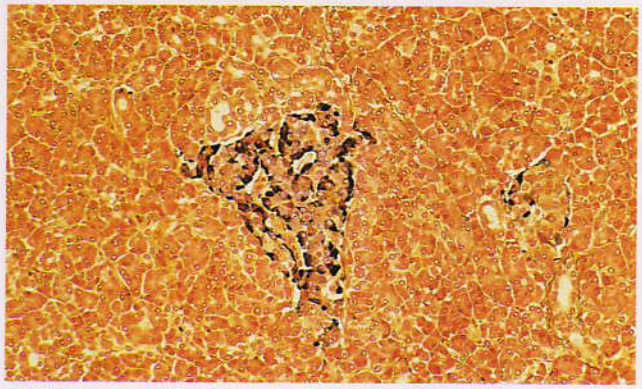
45. Schistoma Mansoni Cigarol/100× (Oil)



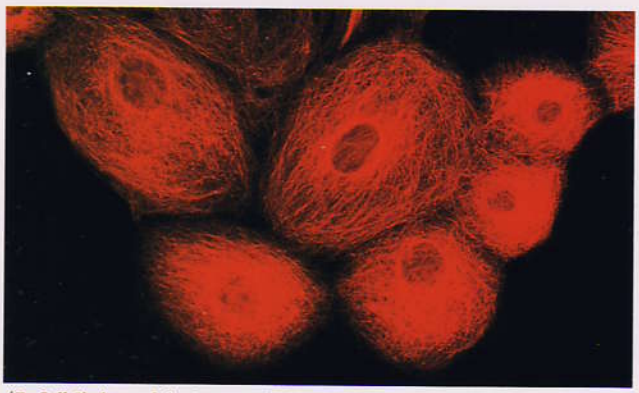
49. Cell Skelton of the Incuvated Human Epidermic Cell/Epi-Fluorescent Illumination/CFUV (Fluor) 20×, 40×/Double Staining With Anti-keratin Antibody F.I.T.C. Label (Green) and Anti-tubuline Antibody Rhodamine Label (Red)



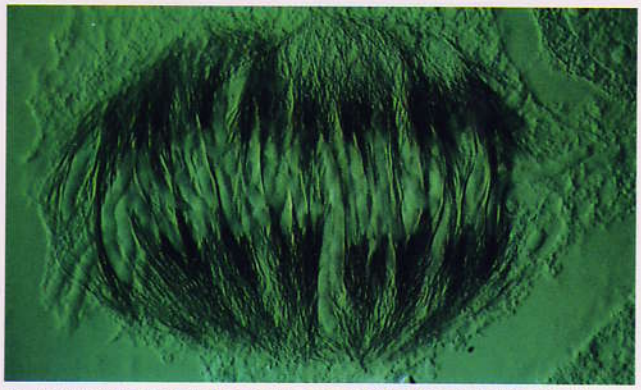
46. Cerebral/CF N Plan Apo 20×



50. Pancreas/CF N Plan Apo 20×/Grimelius Staining



47. Cell Skelton of the Incuvated Human Epidermic Cell/Epi-Fluorescent Illumination/CFUV (Fluor) 20×, 40×/Double Staining With Anti-keratin Antibody F.I.T.C. Label (Green) and Anti-tubuline Antibody Rhodamine Label (Red)



51. Interendosperm Cell Division/Nomarski CF N Plan DIC 100× (Oil)/ Antibody Staining Marked With Colloidal Gold

48. Cellotronine Containing Nerves at the Rat's Colon Intermuscular Nervous Plexus/CF N Plan Apo 10×

52. Complicated Odontoma/Diascopic Illumination/CF Plan Apo 2×

Choose from a wide range of Nikon CF Objectives to meet your specific requirements for clinical observation and laboratory research activities.

CF/CF N Plan Apochromat Objectives

The chromatic-aberration correction capabilities of these new states of the art objectives extend across the entire visible spectrum to include the g line (violet). They have been improved with larger N.A. and are designed to correct all the various aberrations from the center to the far edges of the field of view. Their superior resolving power, image flatness and color reproduction characteristics serve the most demanding researcher for the most difficult observation or critical photo-micrography task.

CF/CF N Plan Achromat Objectives

Offering the performance that was once associated only with Fluor objectives, these objectives avoid the demerits of conventional Achromat objectives to ensure incredible image sharpness over the entire field of view. Superb resolving power due to higher N.A. and high contrast are joined by excellent image-curvature correction, making possible ultrawide-field observation.

E Plan Achromat Objectives

E Plan Achromat objectives provide flatness of field as well as color correction and superior sharp images while at the same time being the affordable choice. Made possible by Nikon's advanced manufacturing techniques, they are rapidly becoming the standard for routine use in today's cost conscious laboratories.

Achromat Objectives

Achromat objectives provide the basic requirements for correcting chromatic aberration using the *c* line (red) and *f* line (blue) standard wavelengths. They are also corrected for spherical aberration and coma. Nikon's CF achromat design improves image flatness, so the sharpness falls off only slightly at the periphery of the field with the image focused at the center. The higher magnification CF Achromats exhibit exceptional flatness for this class of objectives.

E Achromat Objectives

E Achromat objectives provide the highest economic value of the Achromat objectives. Designed for exceptional quality, they clearly outperform other objectives in their price range. An excellent choice for use with student microscopes.

CF/CF N Phase-Contrast Objectives

These objectives offer the superior optical performance of Nikon CF optical design, and incorporate Nikon's special anti-reflective multilayer coatings applied to phase plate to provide sharp, high-contrast images of living or unstained specimens. Nikon also offers oil immersion CF N Plan Apochromat DM high-contrast phase objectives for the researcher who demands the ultimate in the observation of ultra-minute low-contrast phase objects. Ultrawide-field observation is also possible by using CF N Plan series phase objectives.

CF Epi-Fluorescence Fluor Objectives

Featuring extra-high light transmission extending into the ultra-violet excitation range, the high N.A. fluor dry and fluor oil objectives are ideal for observation and photomicrography of low light fluorescence images. The newly developed fluor 40× and 100× oil immersion objectives are designed specifically for high ultraviolet transmission down to the 340nm range for fluorochromes like FURA-2. The glycerine-immersed CF UV-F 100× may be recommended where a water soluble immersion medium is required.

CF Epi-Fluorescence Phase-Contrast Fluor Objectives

These phase-contrast versions of the high-performance CF Fluor objectives facilitate the detailed observation through epi-fluorescence microscopy as well as the high resolution examination of the specimen structure using phase-contrast microscopy. The use of phase contrast to locate the desired portion of a specimen before switching over to epi-fluorescence is an excellent way to minimize fluorescence photo bleaching.

CF/CF N Plan DIC Objectives

Higher resolution, exceptional image sharpness and maximum contrast in Differential Interference Contrast microscopy are provided by these strain-free lenses. Nikon DIC objectives deliver higher extinction in polarization to provide high-contrast, high-resolution images of a living or unstained specimen's most minute microfine structure. DIC avoids the halo effects typical of phase-contrast images as well as providing information about the specimen that cannot be imaged in any other way.

Long-Working-Distance Objectives

CF long and extra-long working-distance objectives provide the solutions for applications requiring the use of special chambers, petri dishes, flasks, thick slides, or micromanipulation. The CF N LWD 100× allows the use of a cover glass up to 1.5mm in thickness, while the CF N ELWD 20× and 40× phase contrast can be used for extra-long working-distance applications up to 6.0 and 6.84mm. Phase contrast and DIC objectives with long working-distance specifications are commonly used for inverted microscopes.

NCG (No Cover-Glass) Objectives

Most high-numerical-aperture dry objectives are designed for use with a cover glass, if their N.A. exceeds 0.65, to prevent deterioration in resolving power and contrast. Certain immersion objectives (such as Plan APO 100× N.A. 1.35) are also subject to these problems because of the subtle difference between glass (nd=1.521) and oil (nd=1.515). To avoid this difficulty when observing specimens such as blood smears and chromosomes, Nikon offers dedicated NCG objectives which are designed for use without cover glasses.

High-Magnification Dry Objectives

Nikon offers high-magnification 60× and 100× dry objectives to eliminate the troublesome processes of immersion and subsequent cleaning of the objective, stage and specimen. These objectives are available with cover-glass-correction collars or for NCG use with uncovered smears.

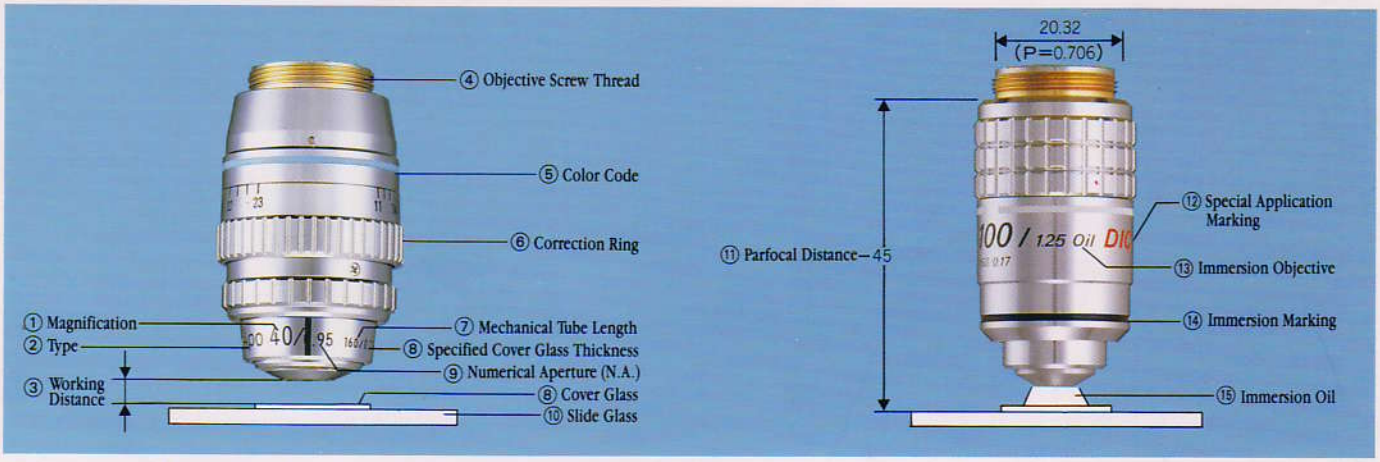
CF Objectives (Mechanical Tube Length: 160mm; Parfocal Distance: 45mm)

Type		Magnification	Numerical Aperture (N.A.)	Working Distance (mm)	Remarks	Phase Ring
Plan Apochromat	Dry	CF Plan Apochromat 2×	0.08	5.3		
		CF N Plan Apochromat 4×	0.20	15.0		
		CF N Plan Apochromat 10×	0.45	2.75		
		CF N Plan Apochromat 20×	0.75	0.64	Spring loaded	
		CF N Plan Apochromat 40×	0.95	0.08~0.18	Spring loaded; with correction ring	
		CF N Plan Apochromat 60×	0.95	0.08~0.17	Spring loaded; with correction ring	
	Oil	CF Plan Apochromat 40×	1.00	0.12	Spring loaded	
		CF N Plan Apochromat 60×	1.40	0.17	Spring loaded	
		CF N Plan Apochromat 100×	1.40	0.10	Spring loaded	
Plan Achromat	Dry	CF N Plan Achromat 1×	0.04	2.2	Spring loaded	
		CF Plan Achromat 2×	0.05	5.8		
		CF N Plan Achromat 4×	0.13	16.22		
		CF N Plan Achromat 10×	0.30	9.22		
		CF N Plan Achromat 20×	0.50	1.78	Spring loaded	
		CF N Plan Achromat 40×	0.70	0.61	Spring loaded	
		CF Plan Achromat 60×	0.85	0.41~0.45	Spring loaded; with correction ring	
		CF Plan Achromat 100×	0.90	0.10~0.12	Spring loaded; with correction ring	
	Oil	CF Plan Achromat 50×*	0.85~0.5	0.34	Spring loaded	
		CF N Plan Achromat 100×	1.25	0.16	Spring loaded	
		CF N Plan Achromat 100×*	1.25~0.5	0.16	Spring loaded	
	Long-Working-Distance/Dry	CF N Plan Achromat ELWD 20×	0.40	6.0		
		CF N Plan Achromat ELWD 40×C	0.55	5.08~6.84	With correction ring	
		CF N Plan Achromat LWD 100×C	0.8	0.66	With correction ring; spring loaded	
	Dry	CF E Plan Achromat 4×	0.10	20.0		
		CF E Plan Achromat 10×	0.25	2.6		
		CF E Plan Achromat 20×	0.40	1.2		
		CF E Plan Achromat 40×	0.65	0.56	Spring loaded	
	Oil	CF E Plan Achromat 100×	1.25	0.17	Spring loaded	
	Long-Working-Distance/Dry	CF E Plan Achromat LWD 10×	0.25	10.5		
Achromat	Dry	CF Achromat 4×	0.10	20.0		
		CF Achromat 10×	0.25	5.6		
		CF Achromat 20×	0.40	2.23		
		CF Achromat 20×C	0.40	1.07~2.78	With correction ring	
		CF Achromat 40×	0.65	0.6	Spring loaded	
	Oil	CF Achromat 100×	1.25	0.14	Spring loaded	
		CF Achromat 100×*	1.25~0.9	0.14	Spring loaded	
	Long-Working-Distance/Dry	CF Achromat LWD 40×C	0.55	0.18~2.39	With correction ring; spring loaded	
	Dry	CF E Achromat 4×	0.10	25		
		CF E Achromat 10×	0.25	5.2		
		CF E Achromat 40×	0.65	0.6	Spring loaded	
	Oil	CF E Achromat 100×	1.25	0.14	Spring loaded	
Phase-Contrast Plan Apochromat	Oil	CF N Plan Apochromat DM 60×	1.40	0.17	Spring loaded	Ph4
		CF N Plan Apochromat DM 100×	1.40	0.10	Spring loaded	Ph4
Phase-Contrast Plan Achromat	Dry	CF N Plan Achromat DL 4×	0.13	16.22		PhL
		CF N Plan Achromat DL 10×	0.30	9.22		Ph1
		CF N Plan Achromat DL 20×	0.50	1.78	Spring loaded	Ph2
		CF N Plan Achromat DL 40×	0.70	0.61	Spring loaded	Ph3
	Oil	CF N Plan Achromat DL 100×	1.25	0.16	Spring loaded	Ph4
	Long-Working-Distance/Dry	CF N Plan Achromat ELWD DL 20×	0.4	6.0		Ph2
		CF N Plan Achromat ELWD DL 40×C	0.55	5.08~6.84	With correction ring	Ph3
		CF N Plan Achromat LWD DL 60×C	0.70	2.45~3.05	With correction ring	Ph3
		CF N Plan Achromat LWD DL 100×C	0.8	0.66	With correction ring; spring loaded	Ph3

*With iris diaphragm

Type		Magnification	Numerical Aperture (N.A.)	Working Distance (mm)	Remarks	Phase Ring
Phase-Contrast Plan Achromat	Dry	CF E Plan Achromat DL 10×	0.25	2.6		Ph1
		CF E Plan Achromat DL 20×	0.40	1.2		Ph2
		CF E Plan Achromat DL 40×	0.65	0.56	Spring loaded	Ph3
	Oil	CF E Plan Achromat DL 100×	1.25	0.17	Spring loaded	Ph4
Phase-Contrast Achromat	Dry	CF Achromat DL 10×	0.25	5.6		Ph1
		CF Achromat DL 20×	0.40	2.23		Ph2
		CF Achromat DL 20×C	0.40	1.07~2.78	With correction ring	Ph3
		CF Achromat DL 20×F	0.40	1.77		Ph2
		CF Achromat DL 40×	0.65	0.6	Spring loaded	Ph3
	Oil	CF Achromat DL 100×	1.25	0.14	Spring loaded	Ph4
	Long-Working-Distance/Dry	CF Achromat LWD DL 40×C	0.55	0.18~2.39	With correction ring; spring loaded	Ph3
		CF Achromat LWD DL 40×F	0.55	1.00	Spring loaded	Ph3
	Dry	CF E Achromat DL 10×	0.25	5.2		Ph1
		CF E Achromat DL 40×	0.65	0.6	Spring loaded	Ph3
Fluor for Epi-Fluorescence	Dry	CF Fluor 10×	0.50	0.88	Spring loaded	
		CF Fluor 20×	0.75	0.66	Spring loaded	
		CF Fluor 40×	0.85	0.37	Spring loaded; with correction ring	
	Oil	CF Fluor 40×*	1.30~0.80	0.22	Spring loaded	
		CF Fluor 100×*	1.30~0.80	0.14	Spring loaded	
	Glycerine	CF UV-F 100×*	1.30~0.80	0.13	Spring loaded	
Phase-Contrast Fluor for Epi-Fluorescence	Dry	CF Fluor DL 10×	0.50	0.88	Spring loaded	Ph2
		CF Fluor DL 20×	0.75	0.66	Spring loaded	Ph3
		CF Fluor DL 40×	0.85	0.37	Spring loaded; with correction ring	Ph3
	Oil	CF Fluor DL 40×*	1.30~0.80	0.22	Spring loaded	Ph4
		CF Fluor DL 100×*	1.30~0.80	0.14	Spring loaded	Ph4
DIC Plan Achromat	Dry	CF DIC Plan Achromat 10×	0.25	7.1		
		CF N DIC Plan Achromat 20×	0.50	1.78	Spring loaded	
		CF N DIC Plan Achromat 40×	0.70	0.61	Spring loaded	
	Oil	CF N DIC Plan Achromat 100×	1.25	0.16	Spring loaded	
DIC Achromat	Dry	CF DIC Achromat 20×C	0.40	1.07~2.78	With correction ring	
	Long-Working-Distance/Dry	CF DIC Achromat LWD 40×C	0.55	0.18~2.39	With correction ring; spring loaded	
Strain-Free Plan Achromat	Dry	CF Plan Achromat P 60×	0.85	0.41~0.45	Spring loaded; with correction ring	
Strain-Free Achromat	Dry	CF Achromat P 4×	0.10	20.0		
		CF Achromat P 10×	0.25	5.6		
		CF Achromat P 20×	0.40	2.23		
		CF Achromat P 40×	0.65	0.6	Spring loaded	
	Oil	CF Achromat P 100×	1.25	0.14	Spring loaded	
No-Cover Glass	Dry	CF Plan Achromat NC 40×	0.65	0.45	Spring loaded	
		CF Plan Achromat NC 60×	0.85	0.35	Spring loaded	
		CF Plan Achromat NC 100×	0.90	0.26	Spring loaded	
	Oil	CF Plan Apochromat NC 100×	1.35	0.17	Spring loaded	

*With iris diaphragm



Nikon offers a wide variety of CF Objectives from which users can choose depending on their research needs and applications. Optimum performance is assured not only by the quality, but also by user-friendly aids such as symbols and marks inscribed on the lens body for easy identification.

① Magnification

Nikon CF Objectives for biomedical applications are available in magnifications of 1×, 2×, 4×, 10×, 20×, 40×, 50×, 60×, 100×.

② Type

Plan Achromat objectives are marked with the magnification and the word "PLAN".
Plan Apochromat objectives are marked with the magnification and the words "PLAN APO".

③ Working Distance

Indicates the distance between the front lens (facing specimen) and cover glass. Generally, as magnification increases, the working distance decreases.

④ Objective Screw Thread

The mounting thread is sized to RMS standards (Royal Microscopical Society) for universal compatibility (Except for CF BD metallurgical series objectives).

⑤ Color Code

The objective magnification can be identified by the color coded ring on the objective barrel.

Magnification	1×	2×	4×	10×	20×	40×	50×
Color Code	Black	Brown	Red	Yellow	Green	Light blue	Light blue

Magnification	60×	100×
Color Code	Cobalt blue	White

⑥ Correction Ring

Dry objectives with high N.A. are susceptible to spherical and other aberrations which can impair resolution and contrast when used with a cover glass whose thickness differs from the specified value. These objectives incorporate a cover-glass-correction ring which allows you to correct this difference to ensure the optimum performance of the objectives.

How to use the cover-glass-correction ring:

a. Position the ring at 0.17 (for standard # $1\frac{1}{2}$ cover slip) and focus the lens on a small artifact in the specimen.

b. Rotate the ring very slightly and refocus the lens again to check if the image has improved or degraded.

c. Repeat the above step to determine if the image is improving or degrading in the direction you are turning the ring. If the image has degraded, follow the same procedure in the opposite direction to find the position offering optimum resolving power and contrast.

⑦ Mechanical Tube Length

Nikon CF Objectives are designed for use where the optical distance between the nosepiece bottom and the top edge of the eyepiece tube is 160mm for biological and 210mm for metallurgical microscopes.

⑧ Specified Cover-Glass Thickness

For optimum performance, always use a 0.17mm cover glass when required.
The table shows how the thickness of a cover glass reduces image formation. At N.A. 0.95, for example, a 0.01mm difference in thickness reduces image formation by 71%; no image formation occurs without cover glass.

N.A.	Difference in Cover Glass Thickness 0.01mm	0.02mm	No Cover
0.25	100%	100%	100%
0.4	100	100	97
0.65	99	96	10
0.8	91	68	0
0.9	62	14	0
0.95	29	11	0

⑨ Numerical Aperture (N.A.)

This critical value indicates the light acceptance angle of the objective and determines the light gathering power, the resolving power and depth of focus.

⑩ Slide Glass

For best results in the preparation of biological slides, always use standard slide glasses with a 1mm thickness.

⑪ Parfocal Distance

All Nikon objectives have a 45mm parfocal distance to minimize refocusing when magnifications are changed. The parfocal distance is measured from the nosepiece objective mounting hole to the point of focus on the specimen.

⑫ Special Application Marking

Objective markings: DL or DM for phase-contrast microscopy; DIC for Differential Interference Contrast; P for Polarized Light; NCG for No-Cover-Glass applications.

⑬ Immersion Objective

The resolving power of an objective increases in proportion to its N.A. (numerical aperture). An immersion type objective, such as CF N 100× Plan Achromat N.A. 1.25 will have a higher resolution than CF 100× Plan Achromat Dry objective since the maximum N.A. of the dry objective is 0.95. To use immersion objectives, a small amount of immersion fluid (Nikon immersion oil for oil immersion objectives or anhydrous glycerine for the UV-F 100× glycerine immersion objective) is applied between the specimen and the front element of the objective.

⑭ Immersion Marking

This color ring shows the type of immersion liquid to be used. Black indicates oil, orange indicates glycerine.

Caution: When using dry objectives with a short working distance, such as Plan Apo 40×, take care not to accidentally rotate objectives into immersion oil on the slide.

⑮ Immersion Oil

Gently blot the lens dry with lens tissue. Then slightly moisten a piece of lens tissue with petroleum benzine (Naphtha) or Xylene and clean all traces of immersion oil from the front element of the oil immersion objective after use.

- ED (Extra Low Dispersion) Glass
  A major advancement in lens design was achieved when Nikon created its unique ED series of glasses with optical qualities similar to the mineral fluorite but without its mechanical and optical demerits. These glasses have allowed Nikon to create new series of higher quality lenses which have better corrections and performance. For example, Nikon CF N Plan Achromats perform at a level comparable to Fluorite type objectives and are second to none.
- Multilayer Coatings
  Nikon's unique high-transmission anti-reflective multilayer coatings are applied to the lens surfaces to reduce flare and ghosts to a bare minimum to ensure high-contrast images. Multilayer coatings are also used on the phase plates in phase contrast objectives to ensure maximum contrast.
- High N.A. Objectives With Spring Loaded Working distances of high-magnification objectives with high numerical apertures are usually very small. To prevent damage, these high-N.A. objective lens assemblies are designed to retract if they touch the specimen.

Design and specifications are subject to change without notice.
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