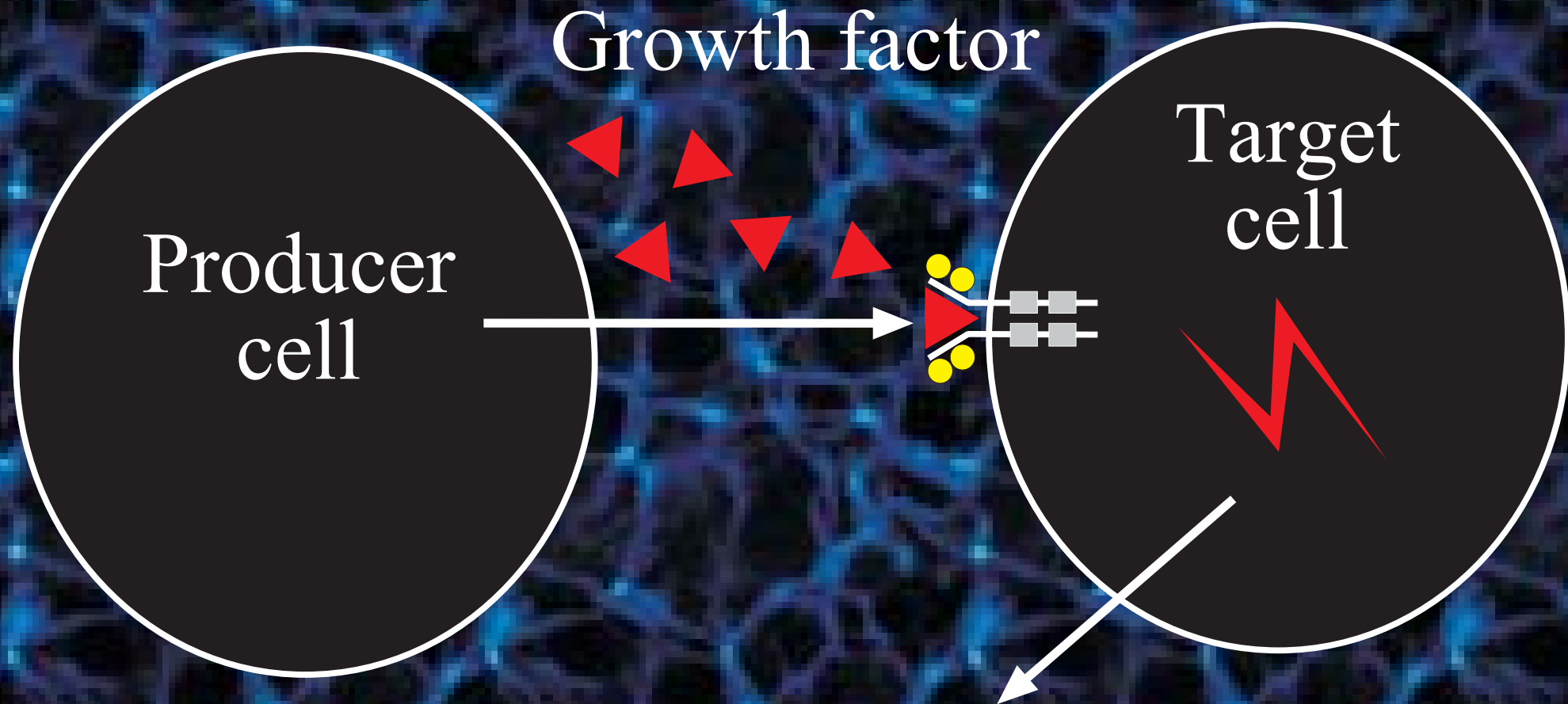


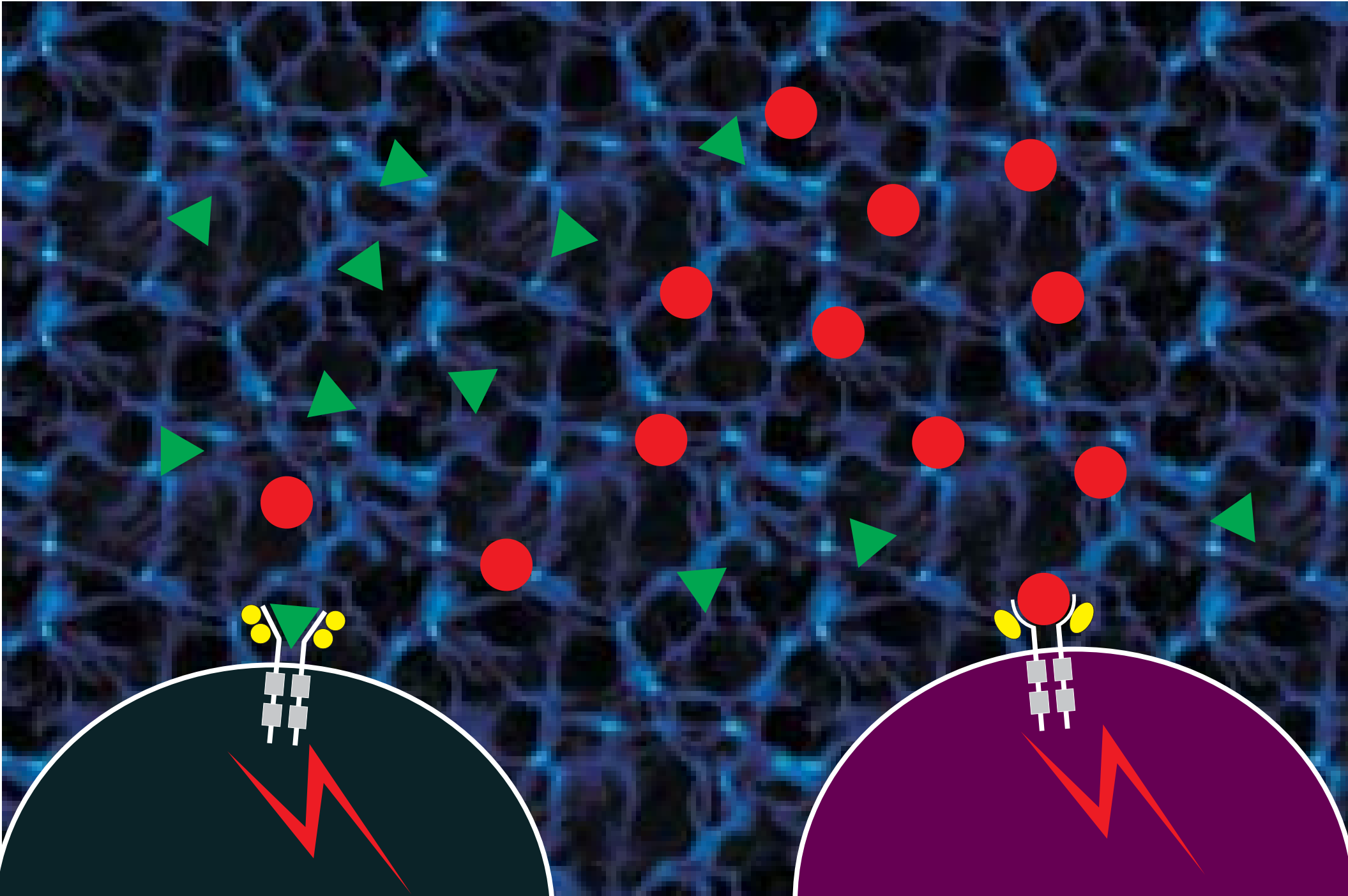
Hyperplasia of lymphatic vessels in VEGF-C transgenic mice

Michael Jeltsch, Arja Kaipainen, Vladimir Joukov,
Xiaojuan Meng, Merja Lakso, Heikki Rauvala,
Melody Swartz, Dai Fukumura, Rakesh K. Jain
and Kari Alitalo

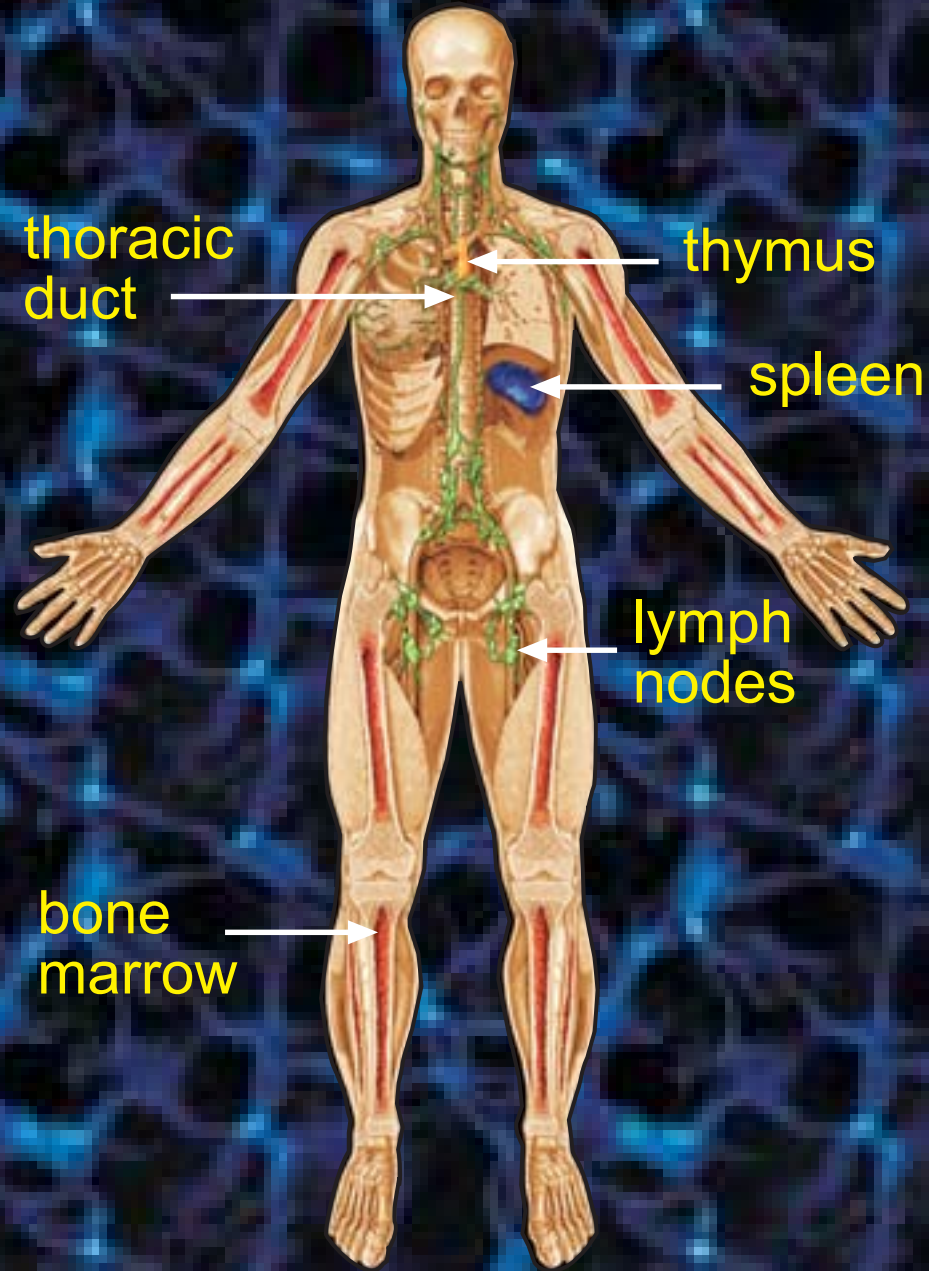
Science 30 May 1997
Volume 276 pp. 1423-1425



BIOLOGICAL RESPONSE







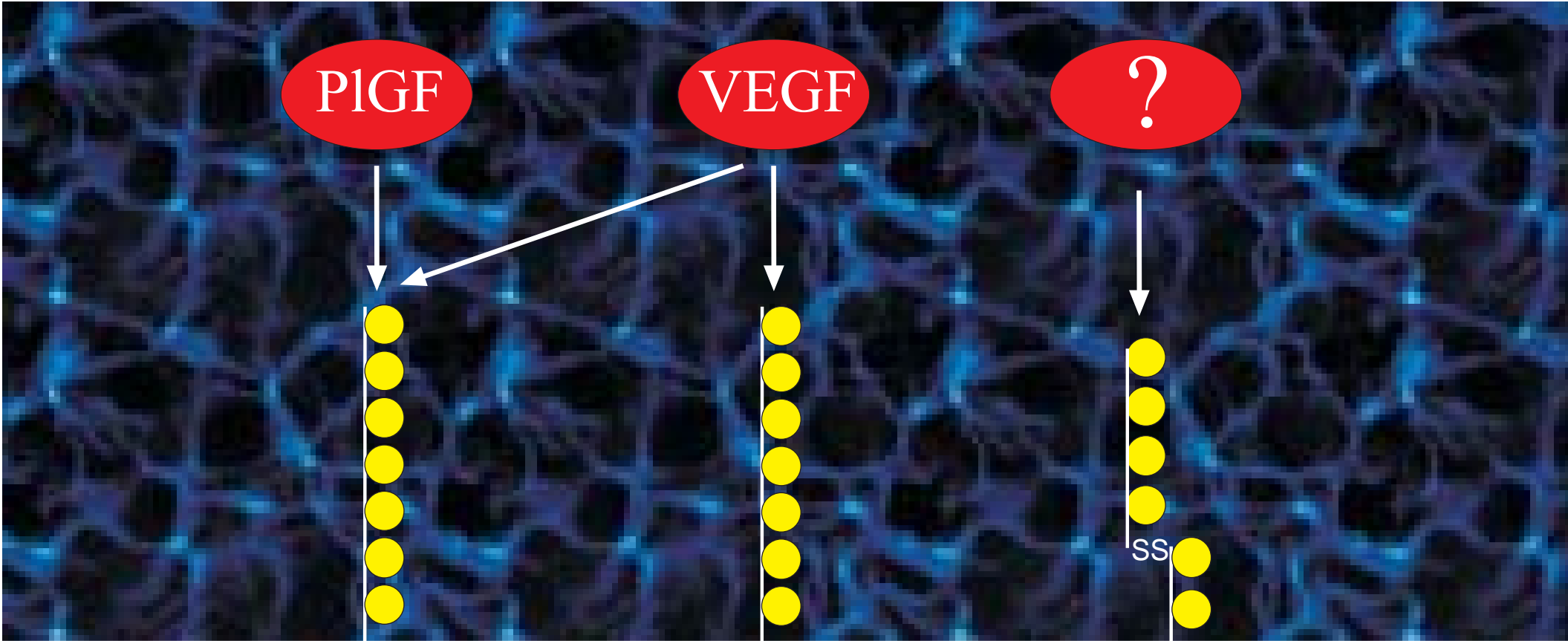
thoracic
duct

thymus

spleen

lymph
nodes

bone
marrow



PlGF

VEGF

?



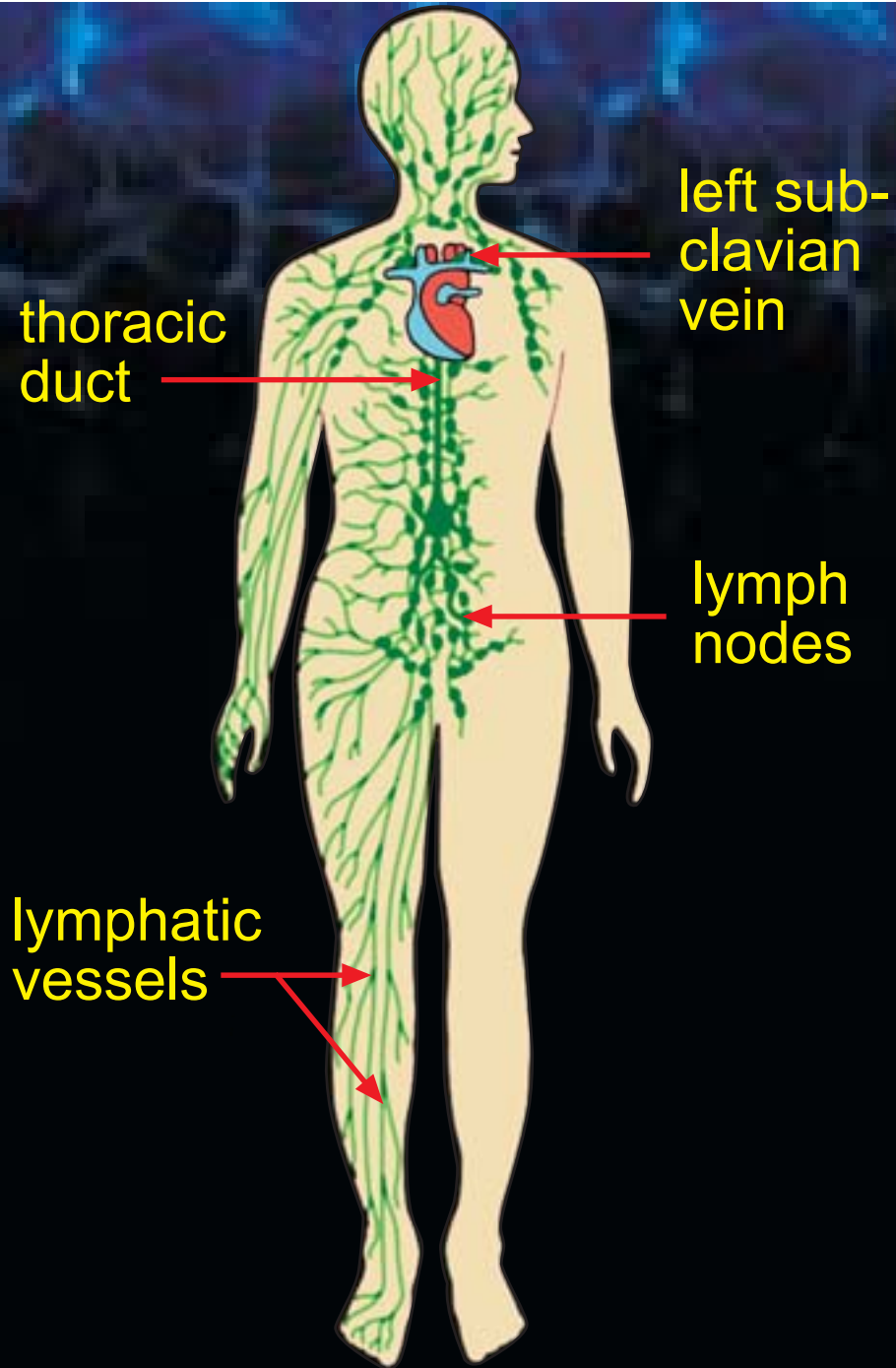
VEGFR-1

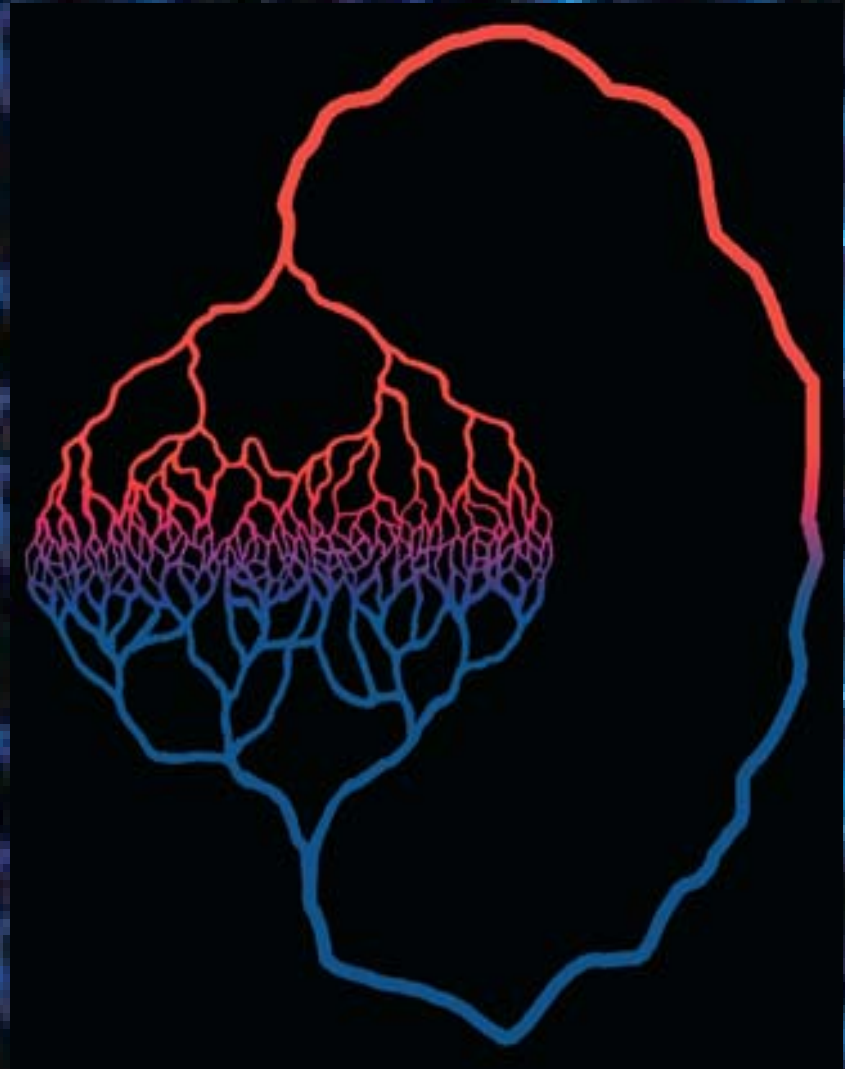
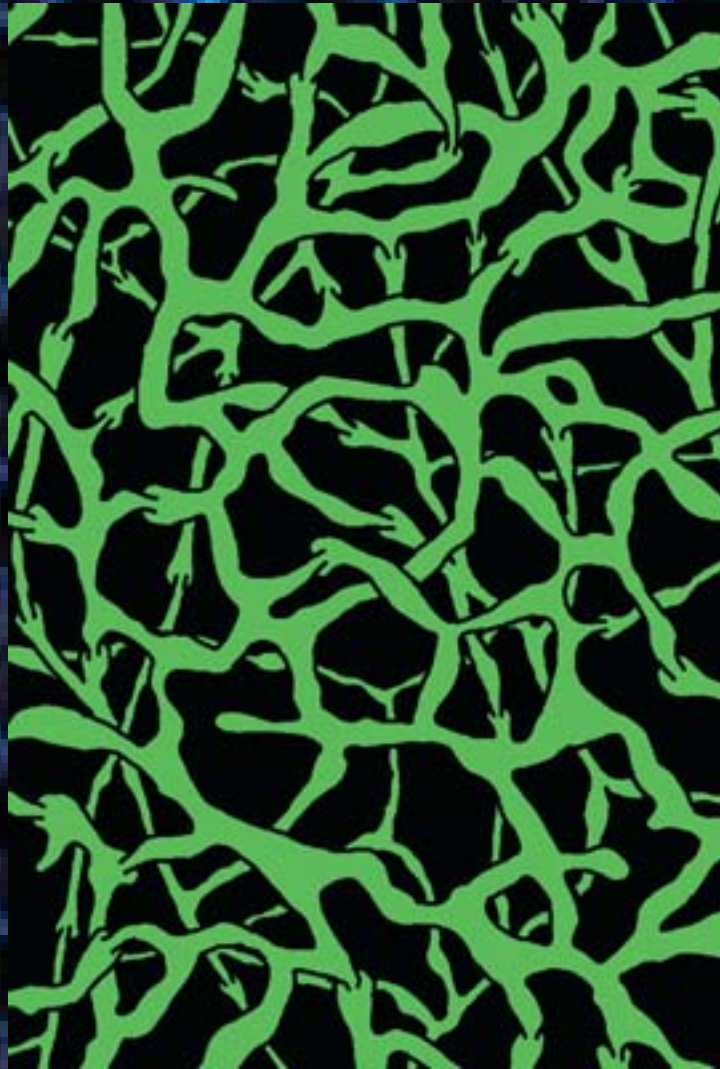
VEGFR-2

VEGFR-3

Blood vessel growth (= angiogenesis)

?





FUNCTIONS OF THE LYMPHATIC SYSTEM

- ✦ **Clearing system:** removal of excess fluid, proteins and particular matter (viruses, bacteria) from interstitial spaces
- ✦ **Transport system:** antibodies, lymphocytes, nutrients



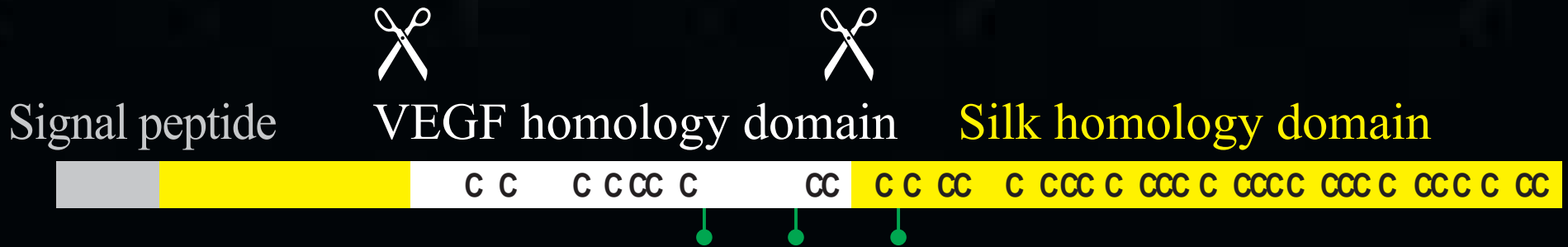
Angiogenesis

- ✦ Development
- ✦ Wound healing
- ✦ Tumor angiogenesis

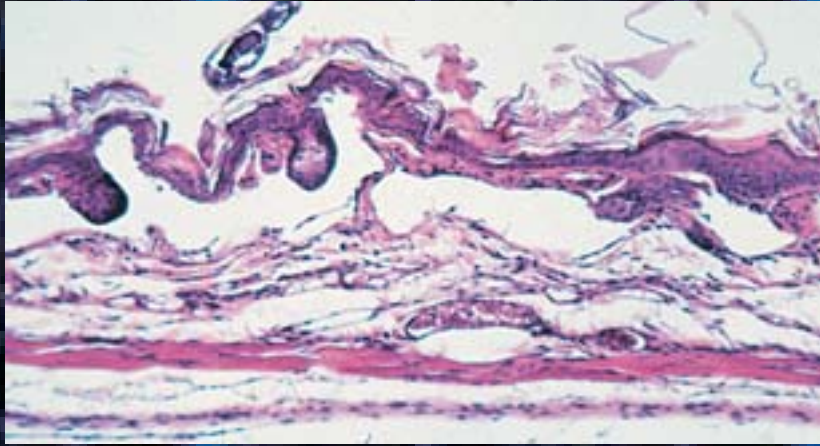


Tumor angiogenesis

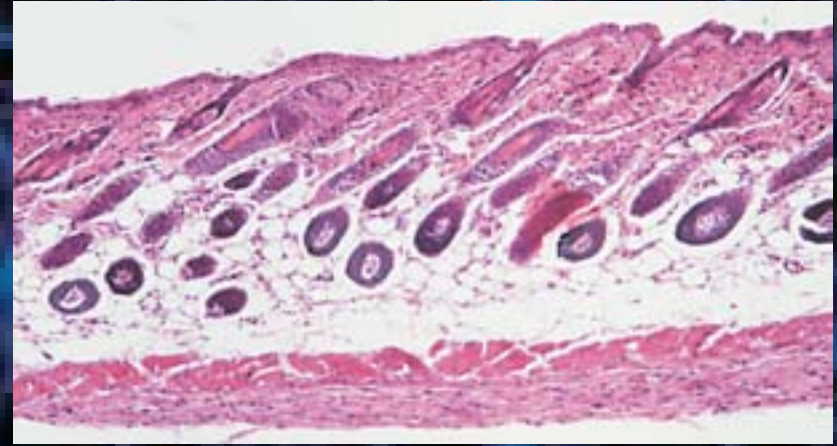
VEGF-C



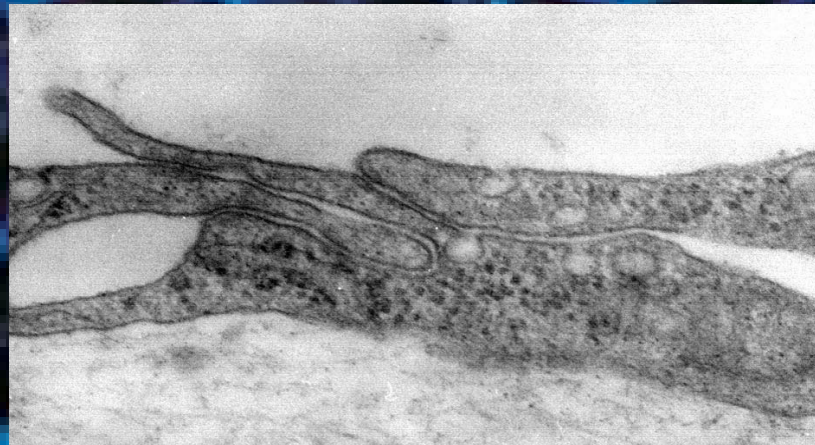




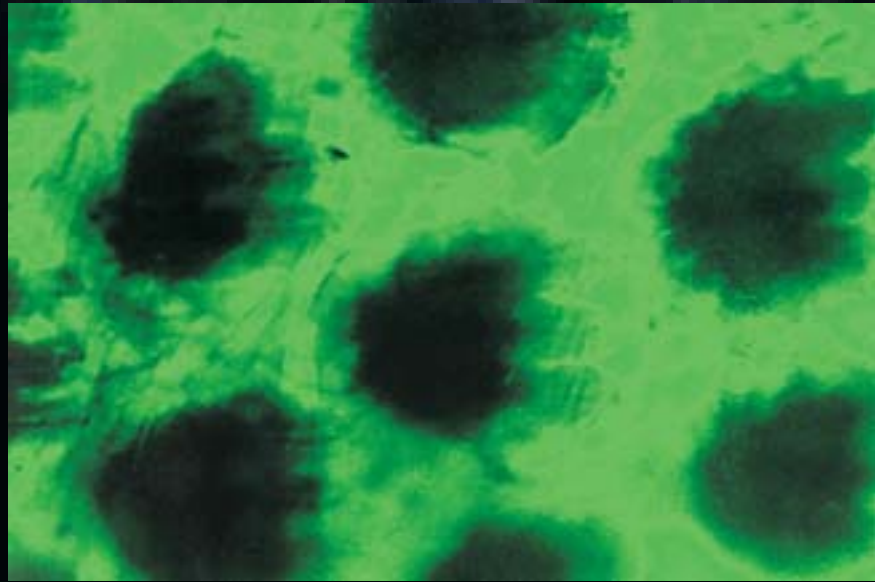
VEGF-C mouse



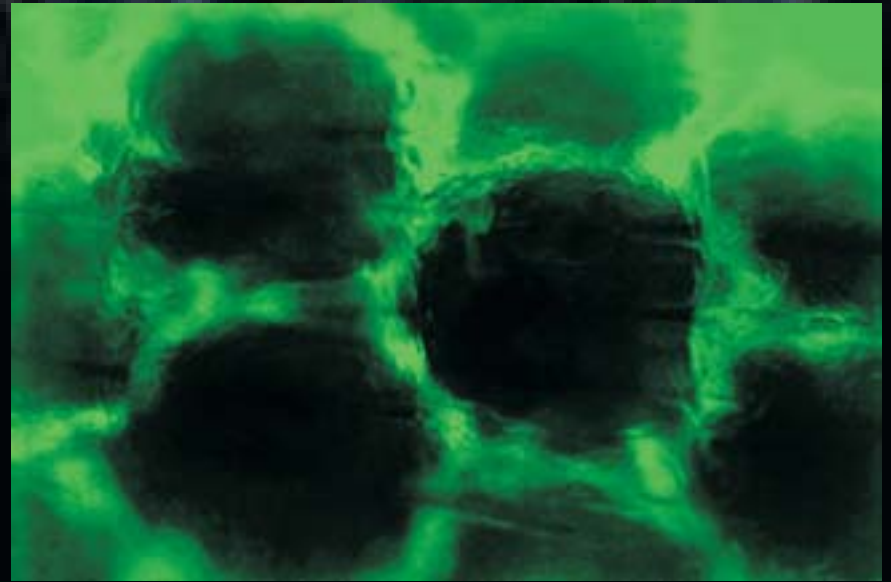
control mouse



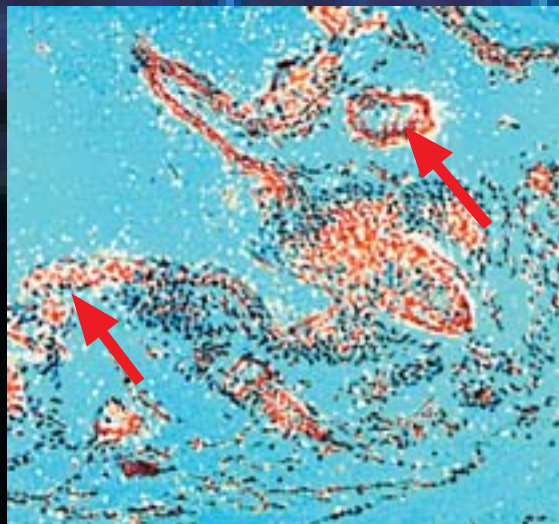
lymphatic vessel



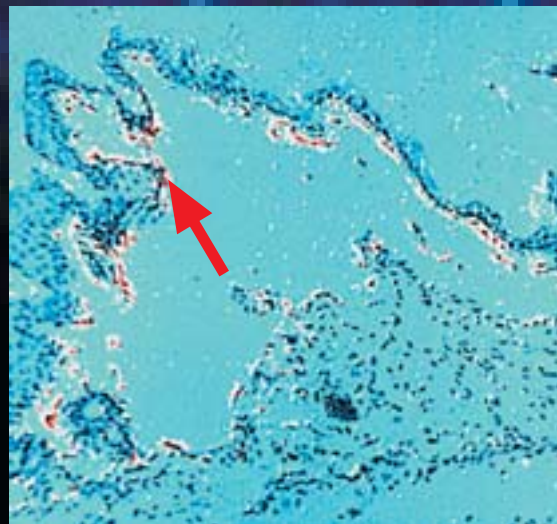
VEGF-C mouse



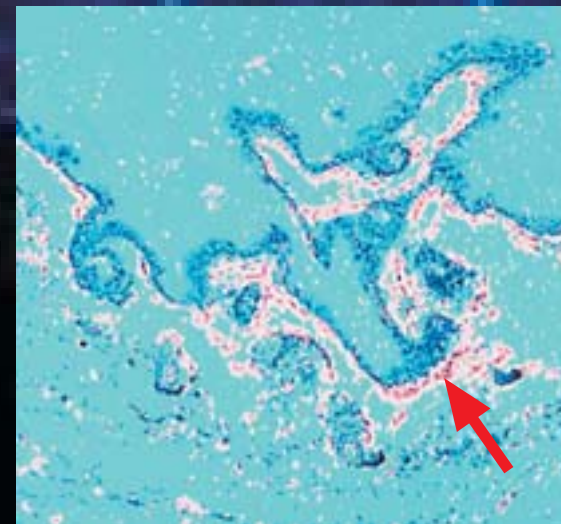
Control mouse



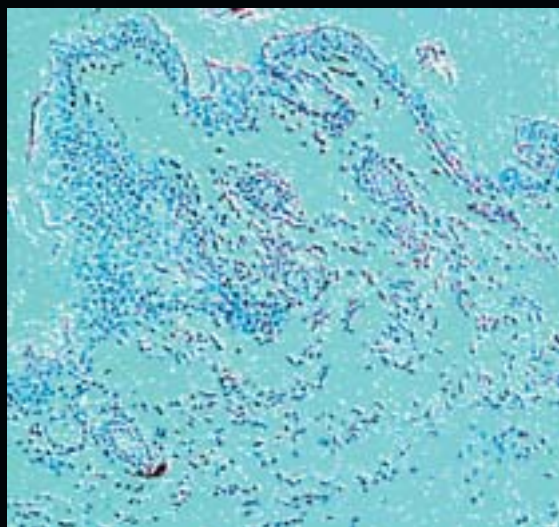
VEGF-C



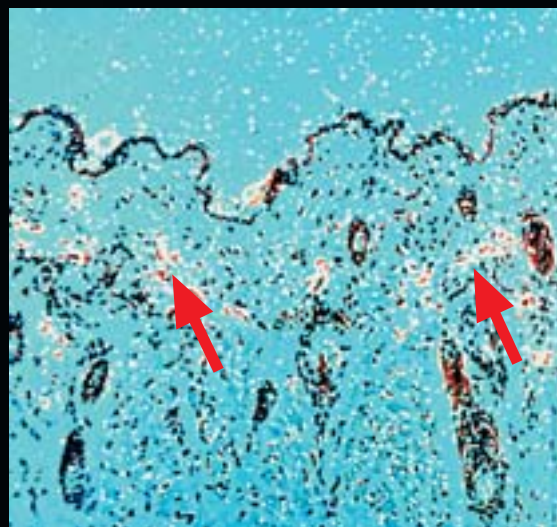
VEGFR-3



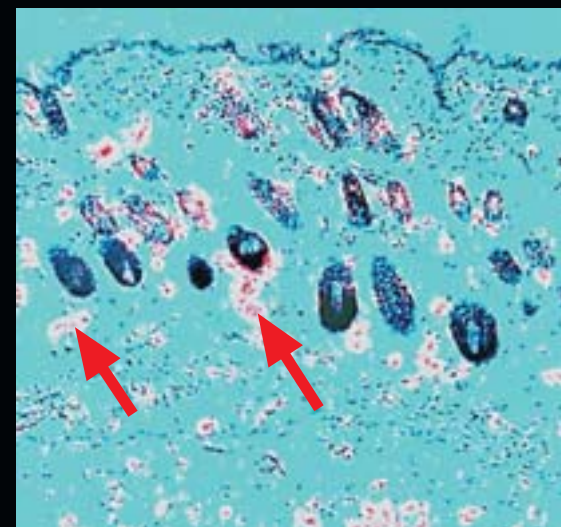
VEGFR-2



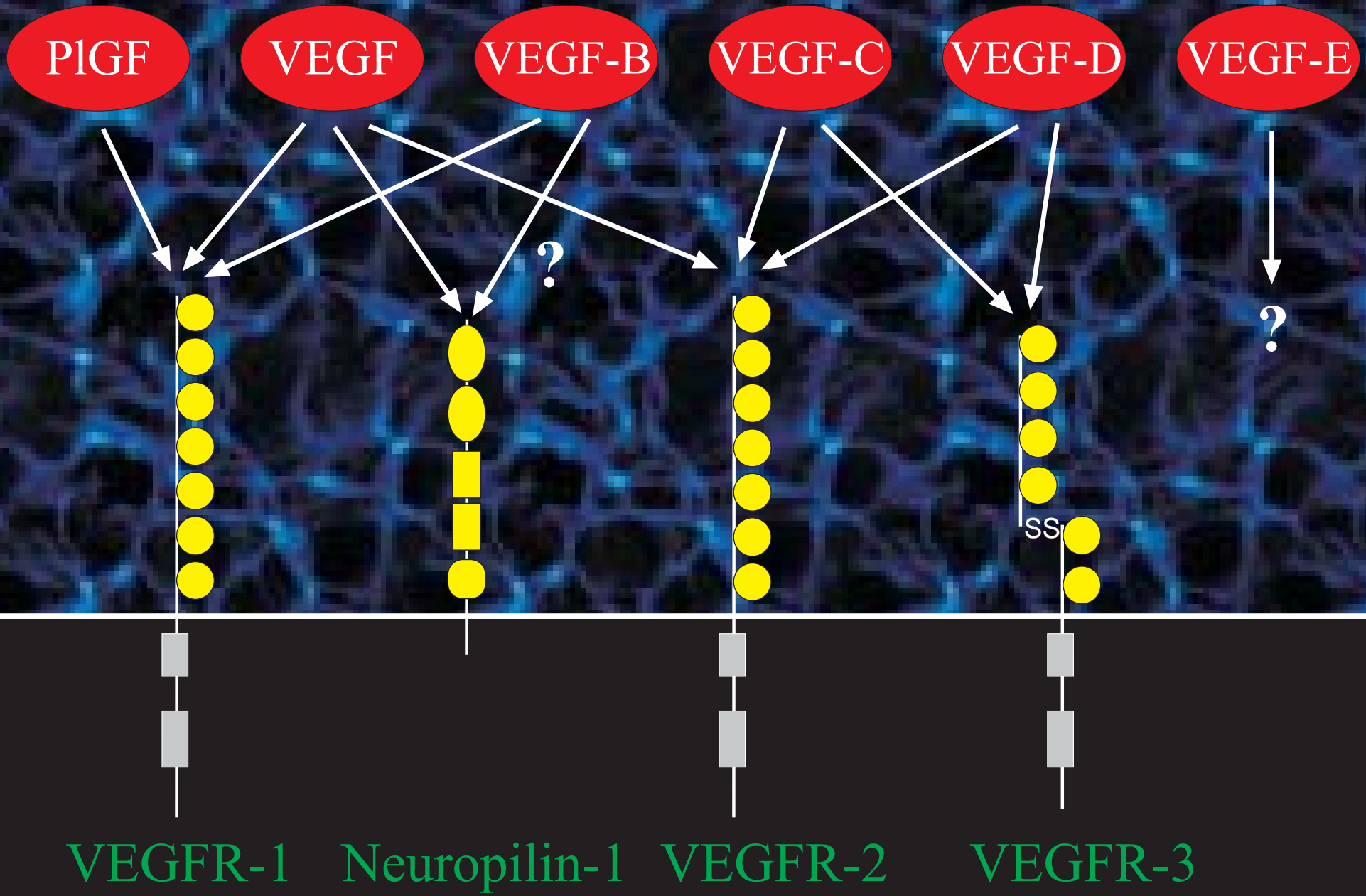
VEGF-C, sense



VEGFR-3, control



VEGFR-2, control



Future applications

✦ Diagnosis, imaging & targeting

✦ Therapy

Stimulation of lymphangiogenesis
(postsurgical edema)

Inhibition of lymphangiogenesis
(lymphangioma)



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