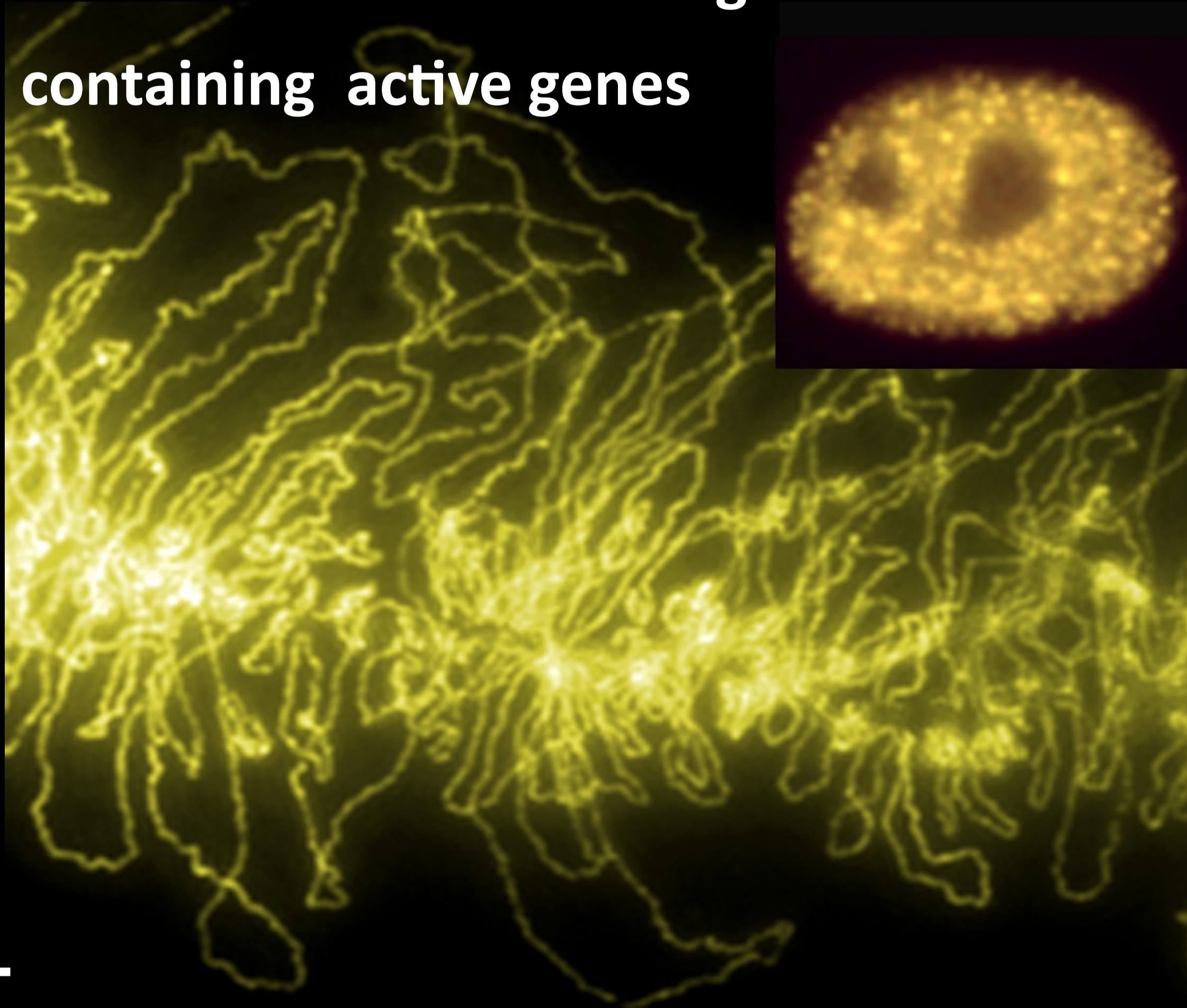


## Comparison of chromosome regions

containing active genes



Comparison of chromosome regions containing active genes: light microscope images to the same scale of a small portion of a newt lampbrush chromosome and top right, an entire nucleus from a human somatic cell (HeLa). Active gene regions are identified using fluorescent antibodies that recognise RNA polymerase II and emit yellow light. The genes of lampbrush chromosome are contained in extended DNA loops and comprise “assembly lines” along which multiple polymerase molecules track making gene transcripts as they go. Because lampbrush genes are so extended they are much more amenable to detailed cytomolecular study than the gene regions of somatic nuclei. The latter form into compact “transcription factories” that are below the resolution limit of even the best light microscope and therefore appear as rather formless spots of fluorescent light.