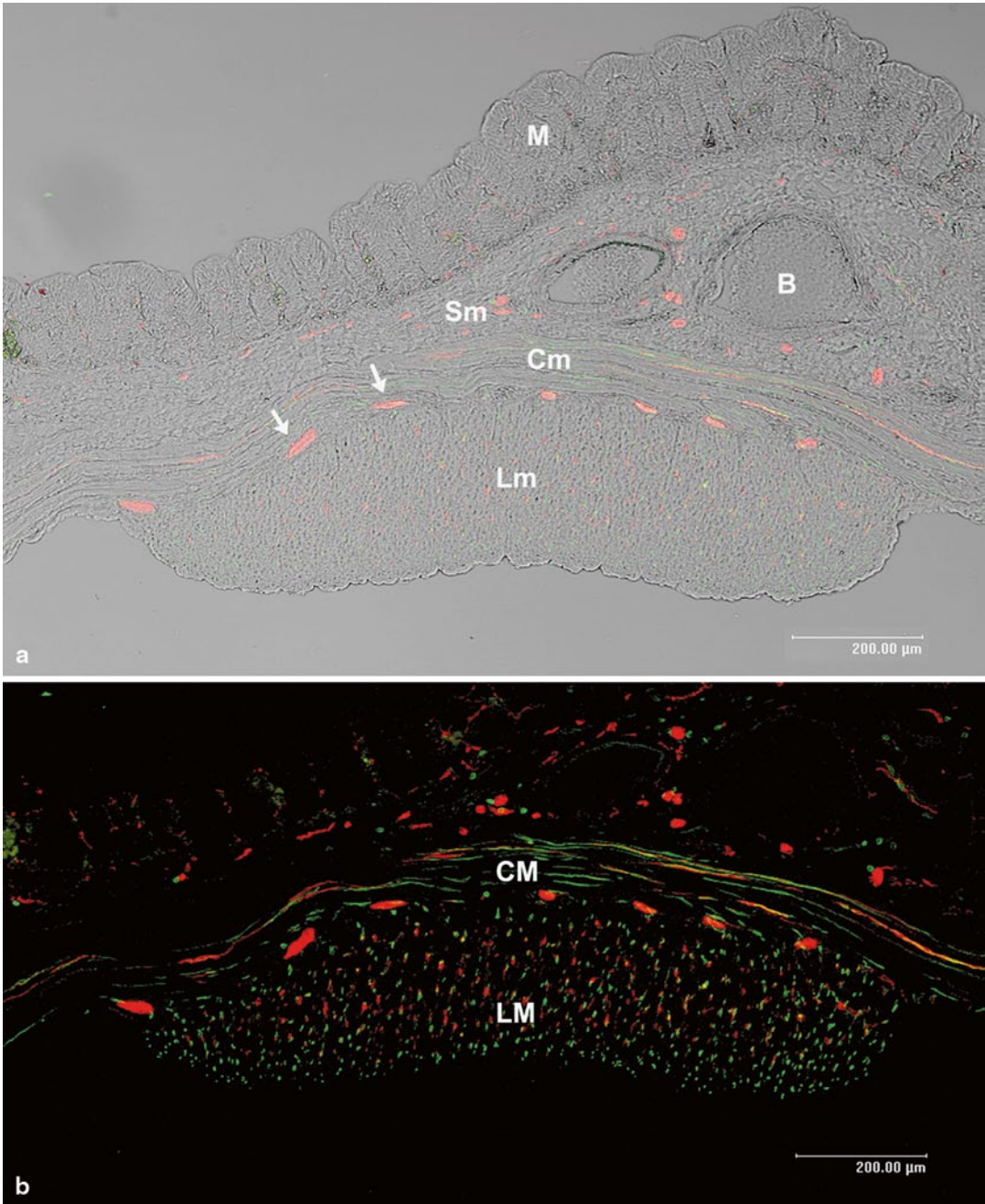


The structure and the significance of the caecum greatly differ among animals and the guinea-pig caecum described here has the taeniae, bundles of the longitudinal muscles, which have been frequently used for the smooth muscle research. ICC

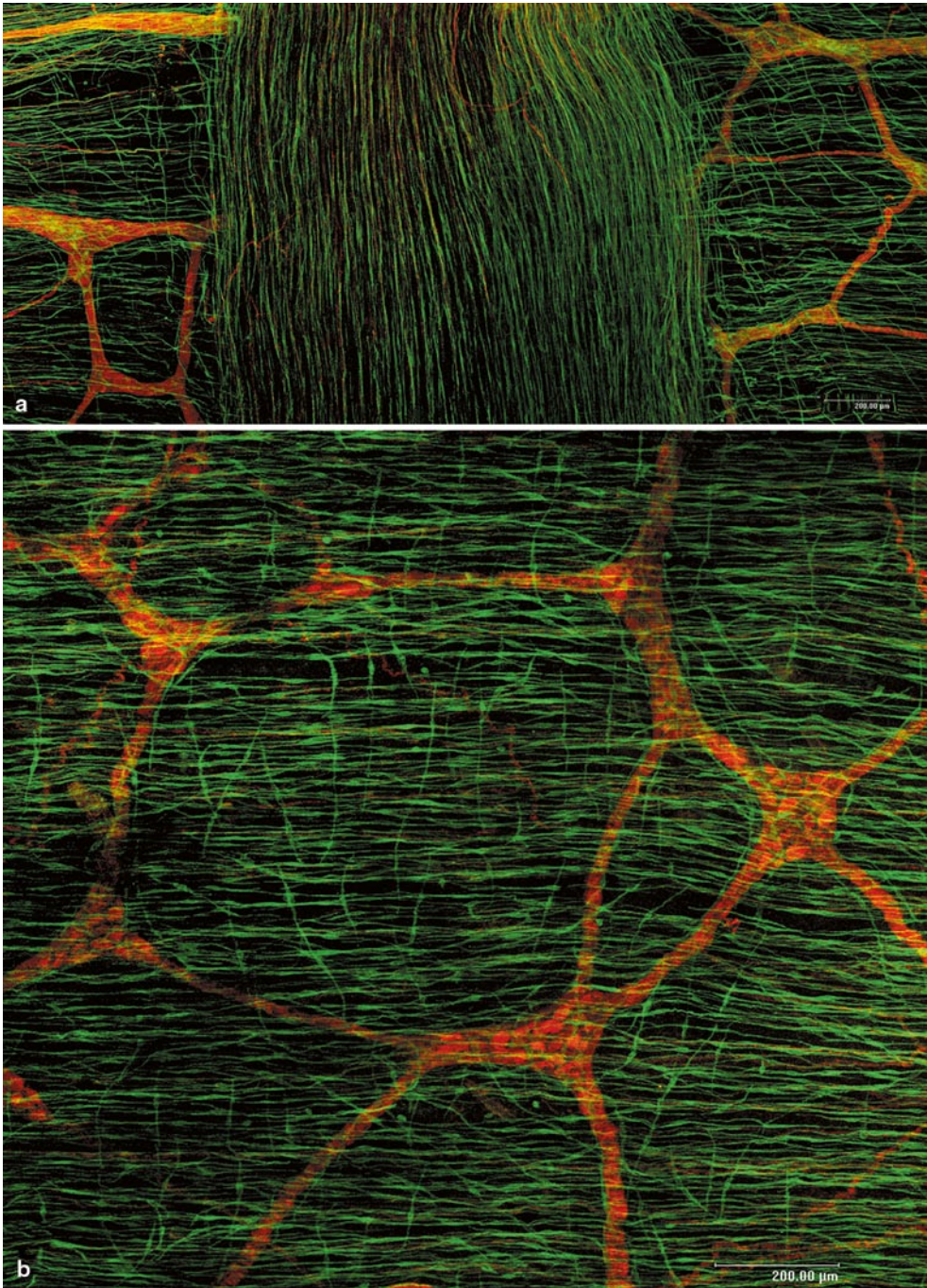
are rather densely distributed in the taeniae and within the circular muscle layer. ICC-MP are only sparsely distributed over the loose network of the myenteric plexus. ICC-SP are found in association with the submucosal plexus.



**Fig. 6.1** A transverse section of the guinea-pig caecum containing a part of the taenia caeci. **a** Image observed with Nomarski optics merged with the image obtained by immunohistochemistry for c-Kit/PGP9.5 to make clear the contours of the specimen. The ganglia of the myenteric (*arrows*) are located between the circular muscle layer (*Cm*) and the longitudinal muscle of the taenia (*Lm*). The submucosa (*Sm*) underneath

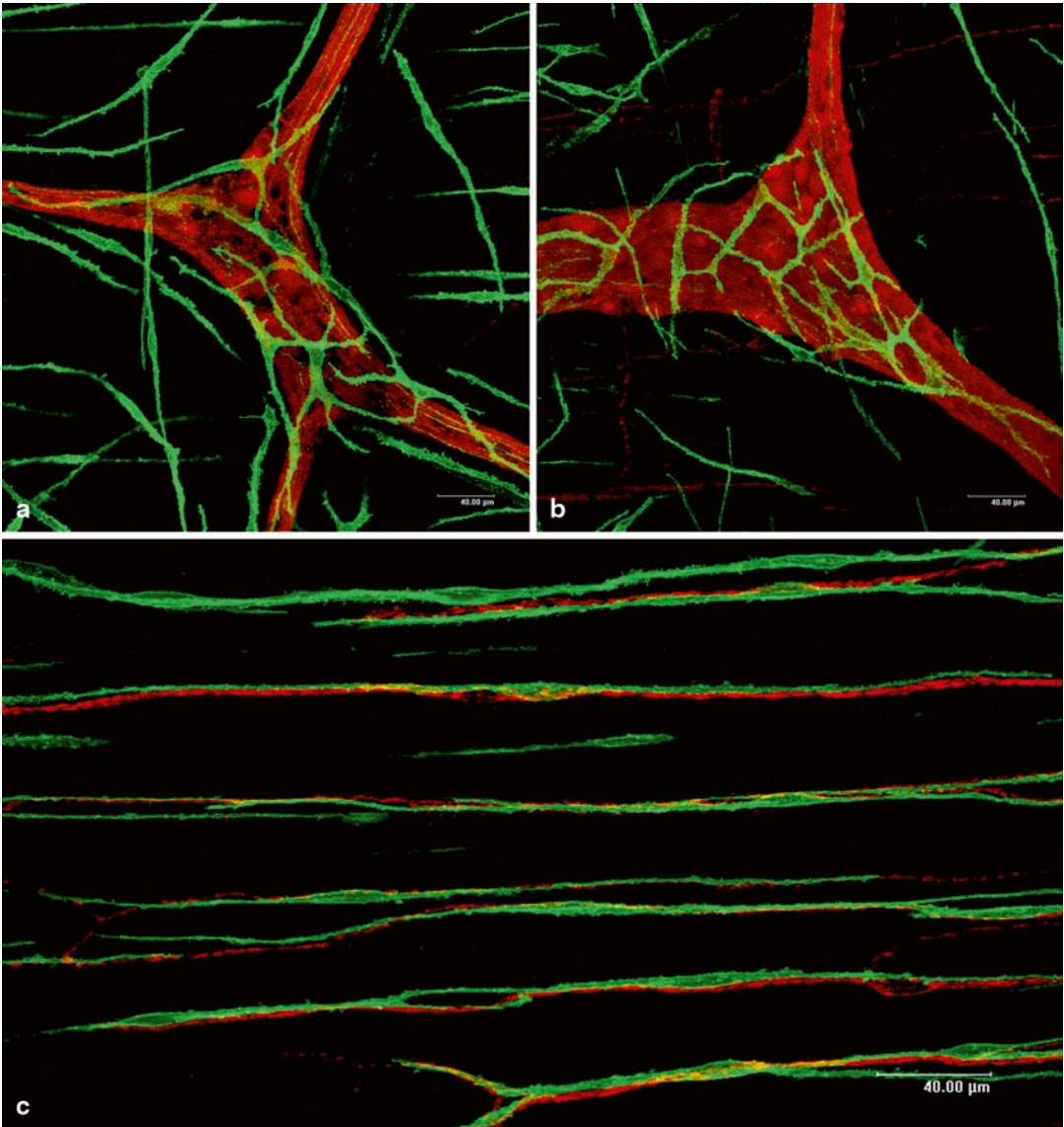
the mucosa (*M*) contains large blood vessels (*B*). *Bar* 200  $\mu\text{m}$ . **b** The same area as in **a** showing clearer images of nerves (*red*) and ICC (*green*). Only a few ICC-CM (*CM*) are found in the circular muscle layer in a transverse section, while ICC-LM are densely distributed in the taenia (*LM*). *Bar* 200  $\mu\text{m}$ . (Courtesy of Dr Tamada, Waseda University).





**Fig. 6.2** ICC-CM and ICC-LM in the guinea-pig caecum. **a** A whole-mount stretch preparation of the guinea-pig caecum containing a part of taenia caeci. Perpendicularly oriented ICC-LM (*green*) within the taenia overlie the loose network of the myenteric plexus (*red*) and the underneath ICC-CM (*green*) oriented horizontally within the circular muscle layer. Bar 200  $\mu\text{m}$ . **b** A whole-mount stretch preparation showing the muscle wall

without the taenia, where numerous ICC-CM (*green*) are arranged horizontally along the axis of the circular muscle cells, while a few ICC-LM (*green*) are found along nearly perpendicular direction. The network of the myenteric plexus (*red*) is clearly observed because of minimal interference by only a few ICC-MP and ICC-LM. Bar 200  $\mu\text{m}$ . (Courtesy of Dr Tamada, Waseda University).



**Fig. 6.3** ICC-MP and ICC-CM in the guinea-pig caecum. **a** Closer view of the myenteric ganglion (*red*) associated with a few multipolar shape of ICC-MP (*green*). *Bar* 40 µm. **b** Another myenteric ganglion (*red*) also shows a

few ICC-MP around it. *Bar* 40 µm. **c** Closer observation of the bipolar ICC-CM (*green*) showing intimate association with the nerve bundles (*red*). *Bar* 40 µm. (Courtesy of Dr Tamada, Waseda University).