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Order-disorder structural transitions in synthetic filaments of fast and slow skeletal muscle myosins under relaxing and activating conditions, Zoya A. Podlubnaya, Sergey L. Malyshev, Krzysztof Nieznański and Dariusz Stępkowski

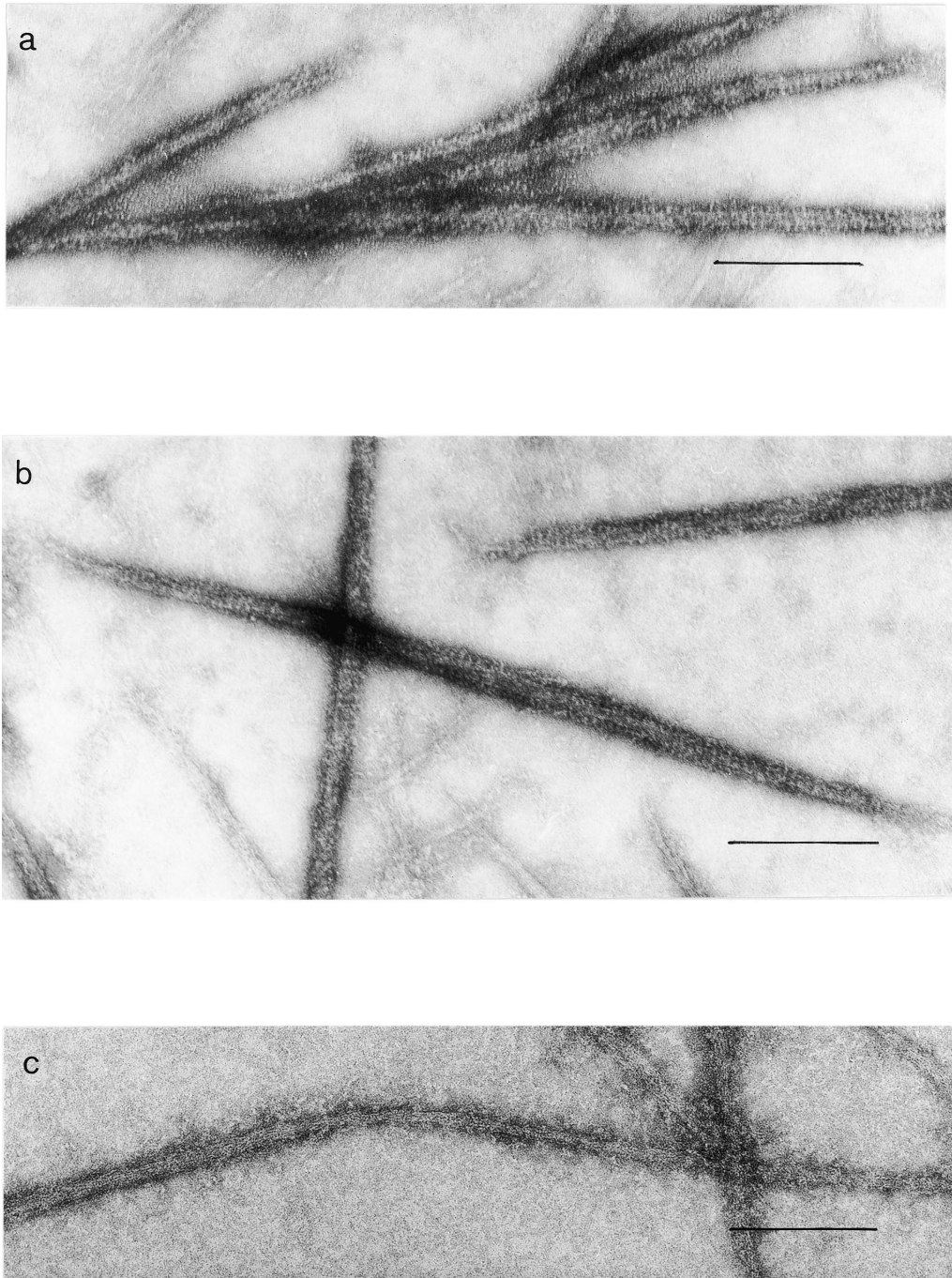


Figure 2. Electron micrographs of synthetic filaments formed by rabbit fast skeletal muscle myosin.

(a, b) In relaxing solution (in the absence of Ca^{2+} and in the presence of ATP, see Materials and Methods). The filaments show compact ordered structure. The cross-striation with an interval of 14.5 nm formed of myosin heads is very distinctly seen along the entire length of the filaments. Bar in all micrographs corresponds to 250 nm. (c) In activating solution (in the presence of Ca^{2+} and ATP). The filaments exhibit disordered, spread structure and axial periodicity of about 14.5 nm is absent. Myosin heads are randomly arranged at a large distance from the filament backbone, due to the release of S2s from the surface of the filament.

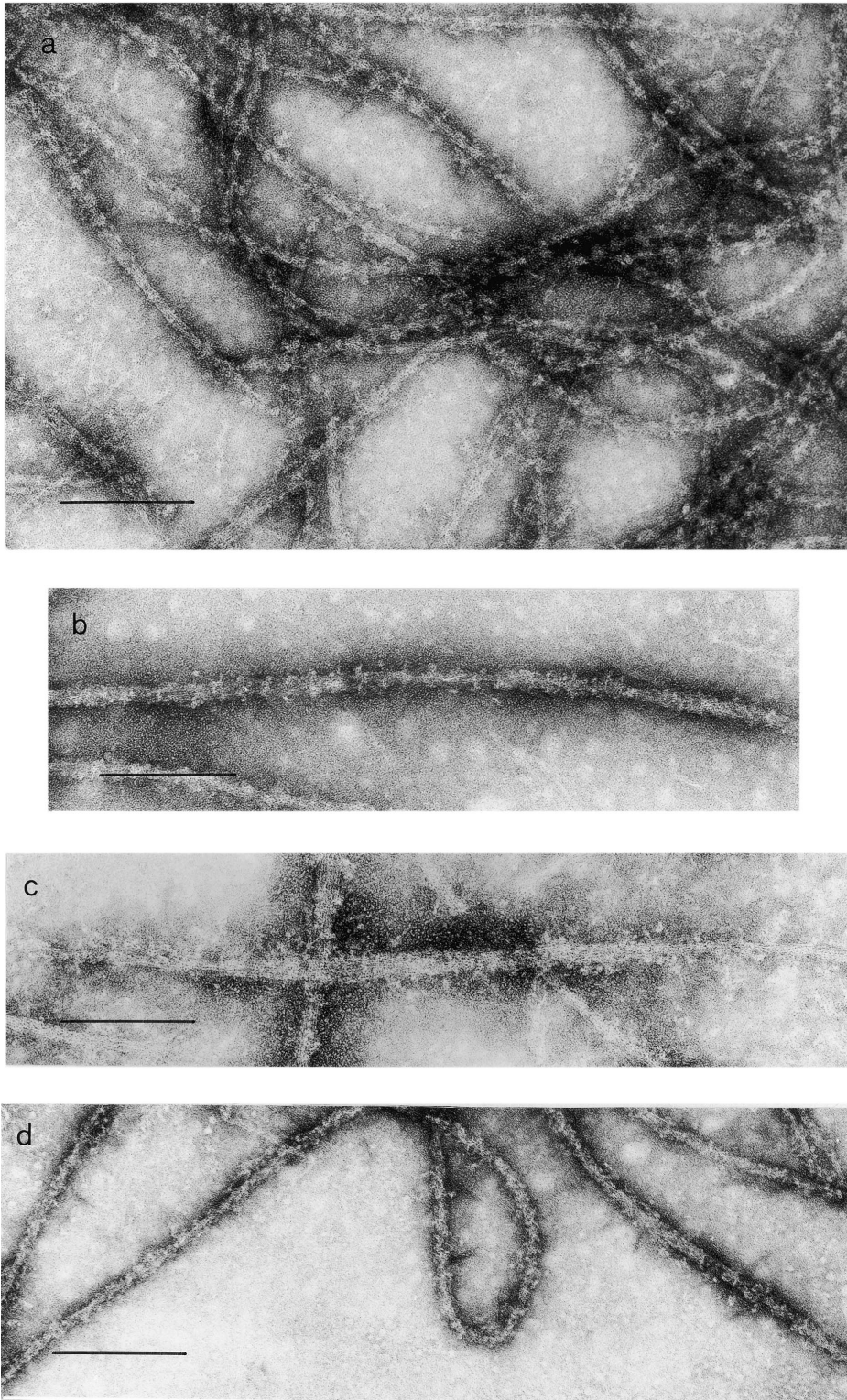


Figure 3. Electron micrographs of synthetic filaments formed by rabbit slow (*semimembranosus proprius*) skeletal muscle myosin.

(a, b) In relaxing solution. There is an axial periodicity of about 43 nm along the entire length of the compact filaments. Such a periodicity is very distinctly seen in the center of the filaments in (b). (c, d) In activating solution. The filaments are disordered with randomly oriented myosin heads and S2s around the filaments.

The equation under Table 1 should be: calcium sensitivity =
$$\frac{(\text{ATPase}_{\text{Ca}^{2+}} - \text{ATPase}_{\text{EGTA}})}{\text{ATPase}_{\text{Ca}^{2+}}} \cdot 100\%$$