Figure 1. Representative muscle sections displaying immunohistochemistry (top four plates) and quantitative histochemistry (bottom two plates). For immunohistochemistry, each plate was incubated in a different primary monoclonal antibody specific for the MHC isoform(s) noted (see table 1 for antibody specificity). Comparing across the staining intensities from the seven primary antibodies and neighboring fibers allowed for final considerations of MHC fiber type, such that, 1 = type I; 2 and 3 = hybrid type IIa+IIx; 4 = type IIx; and 5 = hybrid type I+IIa+IIx. For quantitative histochemistry, specific glycolytic or oxidative capacity was determined by optical density analysis of the gray level of each fiber. Integrated glycolytic or oxidative capacity, a measure of total enzymatic potential, is the product of specific activity and cross-sectional area.
Figure 2. The percentage composition of adult MHC isoforms from soleus muscle of control and ST rats as determined by qualitative immunohistochemistry. I, MHC type I; S/F, fibers that co-express both slow and fast MHC; IIA, MHC type IIa; IIA+IIX, fibers that co-express both MHC types IIa and IIx; IIX, MHC type IIx. a, Significantly different from control, P < 0.05. b, significantly different from 1 month ST, P < 0.05. c, significantly different from 3 months ST, P < 0.05.
Figure 3. Cross-sectional areas (CSA) of soleus muscle fibers from control and ST rats. All, represents all fibers analyzed regardless of MHC isoform composition; S/F, fibers co-expressing both slow and fast MHC. a, Significantly different from control, P < 0.05. b, significantly different from 1 month ST, P < 0.05. c, significantly different from 3 months ST, P < 0.05.
Figure 4. SDH and ISDH enzyme activities in all fibers in rat soleus following spinal cord transection. Values are means – SEM. a, Significantly different from controls. b, Significantly different from 1 month post-ST. c, Significantly different from 3 months post-ST. Significance was accepted at P < 0.05. Note: in some cases, the standard error bars for the SDH measurements are smaller than the symbol size.
Figure 5. GPD and IGPD enzyme activities in all fibers in rat soleus following spinal cord transection. Values are means ± SEM. a, Significantly different from controls. b, Significantly different from 1 month post-ST. c, Significantly different from 3 months post-ST. Significance was accepted at P < 0.05.
Figure 6. GPD/SDH ratio in all fibers in rat soleus following spinal cord transection. Values are means – SEM. a, Significantly different from controls. b, Significantly different from 1 month post-ST. c, Significantly different from 3 months post-ST. Significance was accepted at P < 0.05.