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Regions conferring isoform-specific function in the catalytic subunit of the Na,K-pump.

Pressley TA, **Duran MJ**, **Pierre SV**.

Department of Physiology, Texas Tech University Health Sciences Center, Lubbock, TX 79430, USA. Thomas.Pressley@ttuhsc.edu

The Na,K-pump (i.e., Na,K-ATPase) is critical for maintaining the ionic gradients across the plasma membranes of animal cells. Its component subunits are expressed in multiple forms, but the physiological relevance of this subunit diversity remains unknown. The primary contributor to overall catalysis, the alpha subunit, exists in four isoforms. There are observed kinetic differences among these isoforms, but their subtlety makes them an unlikely basis for physiological significance. Instead, recent work suggests that the major functional distinction among the isoforms is their interaction with regulatory proteins. Moreover, the isoform-specific effects of modulatory agents such as protein kinase C seem to originate within two regions of structural divergence: the amino terminus and eleven residues near the center of the alpha subunit, the isoform-specific region.

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