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## Changes in Lens Proteins Induced at the Early Stage of Cataratogenesis in *cac* (Nakano) Mice\*

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As we were interested in the relationship between the changes of lens proteins and the  $\text{Na}^+$  and  $\text{K}^+$  levels, those changes in lens of *cac* (Nakano) mice at around the stage of appearance of the "pin-head" opacity were analyzed by two-dimensional electrophoresis (2D-PAGE).

The 2D-PAGE profile of lens proteins in 21-day-old *cac* mice differed from that in 27-day-old normal mice, even though the appearance of "pin-head" nuclear opacity (26-day-old) had not yet been observed in the lenses. Especially noticeable were great differences in the polypeptides associated with the  $\alpha$ - and  $\beta$ -crystallin subfractions, the appearances of which corresponded to an increase in a ratio of the amounts of  $\text{Na}^+$  to that of  $\text{K}^+$  in the lenses of defective mice. No dramatic decrease in the  $\gamma$ -crystallin fraction was observed until the mature cataract stage.

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