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In "Specific Effects of Sulfate Ion on Vasopressin-Sensitive Adenylate Cyclase: A Reevaluation of the Magnesium Regulatory Role," by Christian Roy, Gilles Guillon and Serge Jard, pp. 67-73, the last two paragraphs of the Discussion were printed in reversed order. The corrected Discussion follows:

DISCUSSION

The above described results deserve special comments about the regulatory role of Mg^{2+} ions on the adenylate cyclase system and on the kinetic behavior of the enzyme as a function of ATP concentration. Mg^{2+} is a necessary cofactor for the adenylate cyclase reaction (for review, see 8). It is generally accepted that the Mg-ATP complex is the substate of the enzyme (9-11). On several adenylate cyclase system, it was observed that increasing the Mg^{2+} concentration above that needed to complex ATP present led to a further increase in enzyme activity (9, 12, 13). The existence of a Mg^{2+} regulatory site was therefore suggested. Furthermore, it was assumed that the affinity of Mg^{2+} might be modulated by the addition of specific regulatory hormones (12, 14, 15). The latter conclusion was mainly derived from the

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observation that basal and hormone-stimulated adenylate cyclase activities followed different evolution patterns as a function of Mg^{2+} ions in the incubation medium. At least in the case of the vasopressin sensitive adenylate cyclase from the pig kidney, it is clear that these different evolution patterns for basal and vasopressin-sensitive activities were highly dependent on the Mg^{2+} accompanying anion (Fig. 3). The existence of interactions between anionic effects and Mg^{2+} effect(s) makes it difficult to unequivocally define the precise role of Mg^{2+} in the adenylate cyclase reaction.

Depending on the adenylate cyclase system studied, the evolution of the enzyme activity as a function of ATP concentration exhibits either Michaelis-Menten kinetics (9, 16-18) or negative cooperativity (11, 14, 19). It is important to note that depending on the ATP regenerating system used the same adenylate cyclase system may exhibit as a function of ATP concentration these two types of behavior (13). Most probably, albeit rarely mentioned by authors, when pyruvate kinase was used as regenerating system, the enzyme was not desalted before use. The enzyme being stored in ammonium sulfate at least 2 M, the amount of sulfate brought to the incubation medium may vary from 5 to 35 mM depending on the enzyme concentration used. Such sulfate concentrations are

sufficient to induce a cooperativity change as a function of ATP concentration.

At present it is not possible to define the site of action of anions. Basal adenylate cyclase activity and NaF- and vasopressin-sensitive activities are equally sensitive to sulfate when its effect was judged by a modification of cooperativity as a function of ATP concentration. Thus it is conceivable that the anion site of action is on the adenylate cyclase catalytic unit. This interpretation is further confirmed by the observation that detergent solubilized adenylate cyclase is also sensitive to sulfate (G. Guillon; unpublished observation). However the possibility that sulfate might interact with some other component(s) present in the membrane preparation cannot be excluded.