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## JOURNAL ARTICLE

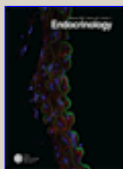
# Determination of the steady-state intracellular chloride concentration in capacitated human spermatozoa

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Chloride channels participate in the mammalian sperm acrosome reaction (AR). However, the mechanism by which sperm regulate intracellular Cl<sup>-</sup> concentration ([Cl<sup>-</sup>]<sub>i</sub>) is not known. The steady-state [Cl<sup>-</sup>]<sub>i</sub> has also never been reported for mammalian spermatozoa. Therefore, using chloride-sensitive fluorescent dyes, we sought to determine the steady-state [Cl<sup>-</sup>]<sub>i</sub> of capacitated human spermatozoa by a null-point measurement technique. We found that the [Cl<sup>-</sup>]<sub>i</sub> was sufficiently elevated (a conservative estimate of > or = 41 mM) such that the opening of chloride channels should result in a Cl<sup>-</sup> efflux and, hence, in depolarization. Moreover, the [Cl<sup>-</sup>]<sub>i</sub> does not remain constant under varying extracellular Cl<sup>-</sup> concentrations ([Cl<sup>-</sup>]<sub>o</sub>).

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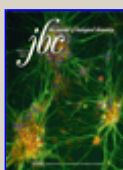
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Endocrinology, September 1, 2008; 149(9): 4680 - 4687.

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J. Biol. Chem., August 17, 2007; 282(33): 24397 - 24406.

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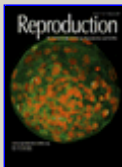
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