Biological similarities and differences between rats genetically different in alcohol preference

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This paper is an inventory of some behavioural, biochemical and pharmacological similarities and differences between two inbred strains of Wistar rats differing in voluntary consumption of ethanol, namely: UChA and UChB with low and high preferences respectively for ethanol under conditions involving free choice between a 10% (v/v) ethanol solution and distilled water. The following strain differences were observed: ethanol consumption (UChA<UChB); total water consumption (UChA<UChB); solid food consumption (UChA>UChB); rate of recovery of ethanol label in expired CO2 (UChA<UChB); oxidation of ethanol to acetaldehyde by brain homogenates (UChA>UChB); acetaldehyde disposal by brain homogenates (UChA<UChB); ethanol (90 mmol/kg, i.p.) sleeping-time (UChA<UChB); chronic and acute tolerance to ethanol (UChA developed it, whereas UChB did not); lethal doses of ethanol (UChA>UChB); recovery rate of the label of gluconate in expired CO2 (UChA<UChB); recovery rate of the label of fructose in ex