2k brief Hypoxia
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OROBOROS INSTRUMENTS

High-Resolution Respirometry in skeletal muscle fibres

Metabolic basis to Sherpa altitude adaptation

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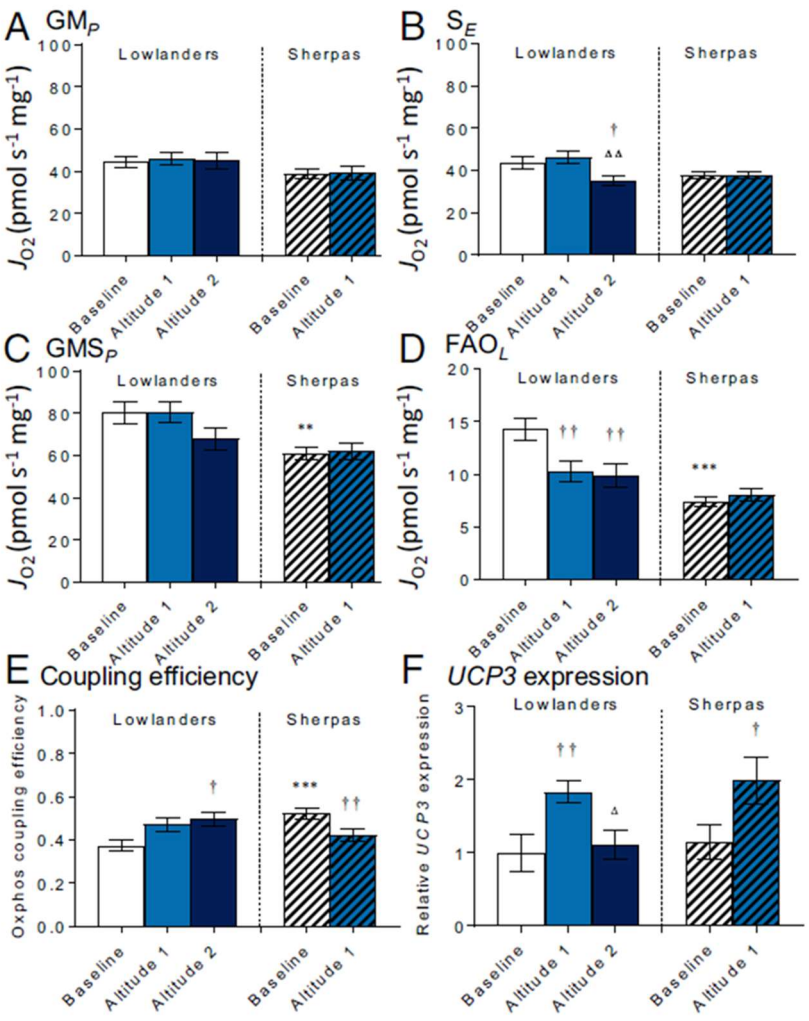
Enhanced efficiency of O_2 utilization, improved muscle energetics, protection against oxidative stress and lower capacity for fatty acid oxidation are the hallmarks of the Sherpas

Mitochondrial oxygen consumption, efficiency, and uncoupling protein expression.

N-OXPHOS (GM_P) *(A)*, S-ETS capacity (S_E) *(B)*, and NS-OXPHOS capacity (GMS_P) *(C)* in permeabilized muscle fibers from Lowlanders and Sherpas. Octanoyl carnitine and malate-supported LEAK (FAO_L) *(D)* and OXPHOS coupling efficiency *(E)*. *(F)* Muscle *UCP3* expression relative to Lowlanders at baseline. Mean ± SEM (n = 7–11).
$^{**}P \leq 0.01$, $^{***}P \leq 0.001$ in Lowlander vs. Sherpas at baseline. $^{\dagger}P \leq 0.05$, $^{\dagger\dagger}P \leq 0.01$ at baseline vs. altitude within cohort. $^{\triangle}P \leq 0.05$, $^{\triangle\triangle}P \leq 0.01$ at altitude 1 vs. altitude 2 within cohort. G, glutamate; J_{O2}, oxygen flux; M, malate, S, succinate.



Reference: Horscroft JA, Kotwica AO, Laner V, West JA, Hennis PJ, Levett DZH, Howard DJ, Fernandez BO, Burgess SL, Ament Z, Gilbert-Kawai ET, Vercueil A, Landis BD, Mitchell K, Mythen MG, Branco C, Johnson RS, Feelisch M, Montgomery HE, Griffin JL, Grocott MPW, Gnaiger E, Martin DS, Murray AJ (2017) Metabolic basis to Sherpa altitude adaptation. Proc Natl Acad Sci U S A 114:6382–7.