enzyme is not required for this proton pumping in the reductive phase. Proton pumping only occurs on injection of the second electron. This is notable because in the oxidative phase of the cycle a single electron seems to be sufficient, and may indicate that more redox energy per electron is available in the oxidative part of the cycle. The usage of the proton transfer pathways is partially different. The charge-compensating proton appears to be taken up by means of the K-pathway in the E to R transition (in contrast to the prediction of ref. 4), but through the D-pathway in the F to O transition (Fig. 2b and ref. 21). The D-pathway, however, is required for proton pumping in both cases. The mechanism of proton-pumping itself remains to be elucidated. □

Methods

The proteoliposomes of wild-type or D124N cytochrome *c* oxidase were prepared as described[9]. For the spectroscopic measurements, 500 μl proteoliposomes containing 6 μM or 20 μM enzyme were mixed with 500 μl of 50 mM HEPES/KOH buffer, pH 7.4, 100 mM β-D-glucose in an anaerobic cuvette, degassed and overlaid with argon. After recording a reference spectrum for the oxidized form of the enzyme (O), a 100-fold molar excess of hydrogen peroxide and 40 μg glucose oxidase were added to form state F. Next, we added 25 μg catalase, and the cuvette was flushed with carbon monoxide in the dark. We recorded optical absorbance spectra every 90 s. For comparison the same procedure was used with 10 μM solubilized D124N mutant enzyme in the presence of 0.05% dodecyl-β-D-maltoside as detergent.

The photopotential was measured as described[9]. Proteoliposomes were adsorbed to a planar lipid membrane (protein concentration in the cuvette approximately 100 nM), and the potential was measured across the proteoliposome/planar membrane system. The states E or F were prepared as described above for the spectroscopic measurements. Next, the cytochrome *c* oxidase was reduced upon laser-flash excitation of tris(2,2′-bipyridyl) ruthenium, a photoactivatable electron donor.

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errata

A laboratory analogue of the event horizon using slow light in an atomic medium

Ulf Leonhardt

Nature **415**, 406–409 (2002).

In Table 1 of this Letter, the average particle number for slow light was incorrectly expressed as: $\frac{1}{(e^{\pi\mu}-e^{-\pi\mu})^2}$. It should have read: $\frac{1}{(e^{\pi\mu}+e^{-\pi\mu})^2}$. □

Cbl–CIN85–endophilin complex mediates ligand-induced downregulation of EGF receptors

Phillippe Soubeyran, Katarzyna Kowanetz, Iwona Szymkiewicz, Wallace Y. Langdon & Ivan Dikic

Nature **416**, 183–188 (2002).

In Fig. 3c of this Letter, the line (filled circles) labelled EGF+CIN85 should have been labelled EGFR+CIN85−3SH3, as in Fig. 3d. □

corrigendum

Crystal structure of DegP (HtrA) reveals a new protease-chaperone machine

Tobias Krojer, Marta Garrido-Franco, Robert Huber, Michael Ehrmann & Tim Clausen

Nature **416**, 455–459 (2002).

In this Letter, the Protein Data Bank entry code for the DegP S210A crystal structure is incorrectly listed as 1KJ9. It should be 1KY9. We thank C. Zardecki for bringing this to our attention. □

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