The process of anaerobic oxidation of $\text{NH}_4^+$ with $\text{NO}_2^-$ to $\text{N}_2$ (anammox) involves a cyclic electron flow. Electrons from the oxidation of the intermediate hydrazine are shuttled via the $\text{bc}_1$-complex to the nitrite reductase and hydrazine synthase, respectively. For carbon fixation, the electrons from hydrazine oxidation are proposed to be redirected to the enzymatic reactions of the reductive acetyl-CoA pathway. These electrons need to be replenished, notably by the oxidation of nitrite to nitrate, catalyzed by the nitrate reductase (NAR). To enter the $\text{bc}_1$-complex or to be fed into a quinol pool, the electrons have to be energized by reverse electron transport.

The NAR gene cluster in the genome of *Kuenenia stuttgartiensis* not only encodes the catalytic subunits narGH, but a whole range of electron transfer proteins, including 6 putative heme c and 3 heme b proteins, all of these being detected in the transcriptome and the proteome of *K. stuttgartiensis*. Further, the genome shows abundance in cytochrome c-encoding genes and multiple homologs to the membrane-bound respiratory complexes, leading to the assumption that anammox cells conserve ATP by means of electron-transport phosphorylation.

To come to understanding of electron transfer complexes of *K. stuttgartiensis*, membrane fractions were separated by Blue Native-PAGE. Whole lanes were subjected to native in-gel activity assays and the constituting polypeptides were separated in a second dimension by SDS-PAGE for subsequent MALDI-TOF analysis.