The natural resistance-associated macrophage proteins (Nramp) form a family of secondary active transporters facilitating the transport of divalent metal ions (Mn2+, Fe2+, Cd2+, Co2+, Zn2+) across biomembranes. Bacterial proteins belonging to the Nramp family were describedas proton-dependent manganese transporters - MntH. MntH homolog from E. coli representing a model system for structure function relationship was used in this study. Metalinduced proton transport mediated by MntH was measured by means of changes in intracellular proton concentrations using pH sensitive fluorescent protein pHluorin. This approach does not allow proper estimation of real quantity of transported protons, since the internal pH is tightly regulated. The cellular buffering capacity was calculated from measured pH changes induced by addition of propanoic acid, in order to better quantify the transport. The changes in [H+] induced by cadmium were recalculated using buffering capacity for the wild type MntH and its single-point mutation N401G, known to influence intracellular pH. It was shown that the chosen approach significantly influences results, including the dependence of transport on external pH. Potential influence of cadmium to respiration was imitated by using inhibitors of respiratory chain (KCN, NaN3) in measurements with nontoxic manganese.