The crystal structure of barium succinate, BaC\textsubscript{4}H\textsubscript{4}O\textsubscript{4}, shows a symmetry very close to space group I\textoverline{4}a/amd. The small deviations of the actual atomic arrangement from this high symmetry gives rise to multiple twinning, which leads to the tetragonal pseudo-symmetry observed in the crystal morphology. The deviations are associated with the low symmetry of the succinate molecule O\textsubscript{2} - CH\textsubscript{2} - CH\textsubscript{2} - O\textsubscript{2} which is incompatible with the site symmetry of 42m occupied in I\textoverline{4}a/amd. In quantity, however, these deviations of some carbon and oxygen positions from the "ideal" values are so small, that the crystal structure could be refined to R-values of about 6% in a lot of different space groups, for example Fddd. Pnma, C222\textsubscript{1}, P4\textsubscript{1}, C2/c or P2\textsubscript{1}, all being subgroups of I\textoverline{4}a/amd which share the same connectivity network of Ba\textsuperscript{2+}-ions and succinate chains along the pseudo-four-fold axis. The true space group C2 could only be found by optical experiments in conjunction with group-theoretical considerations. The twin law is represented by the "lost" symmetry elements, especially the 4-fold axis.

Twinned crystals of BaC\textsubscript{4}H\textsubscript{4}O\textsubscript{4} were grown from aqueous solution. They show tetragonal symmetry with faces \{112\} and \{100\}, as first described by Haushofer [1]. The crystal structure was not investigated until now, in contrast to many other succinates [2].

A single crystal was prepared by cutting a twin under the polarizing microscope. X-ray-diffraction intensities (full sphere up to 2\Theta = 65\textdegree, Mo K\alpha) were measured in tetragonal geometry (a = 7.601(1) \textAA, c = 10.293(1) \textAA) on a 4-circle diffractometer (AFC6R, RIGAKU/MSC). The deviation from tetragonal geometry is of the order of 0.2\textdegree as detected by optical means as misfit angle between faces of a twinned crystal.

One of the first extensions of the notion of symmetry is Shubnikov theory of antisymmetry, used as the basis for various applications in geometrical crystallography and its generalizations. Interpretation of antisymmetry as two-colored symmetry resulted in the idea of p-symmetry; the other generalization of antisymmetry - the multiple antisymmetry is obtained ascribing to the points of a figure not only one, but several qualitatively different sign \epsilon or -\epsilon. Diverse approaches to the colored antisymmetry introduced by Pawley, Nenonova and Belov, and their further generalization - cryptosymmetry of Niggli and Wondrackel are the synthesis of the both.

The mentioned generalizations of antisymmetry and colored symmetry are included in P-symmetry, using arbitrary number of colors \textit{p} (not only \textit{p}=2, as antisymmetry) assigned to the points of a figure, and arbitrary group \textit{P} of colorpermutations (not only cyclic groups, as Belov symmetry. Below P-symmetry is a particular case of P-symmetry with cyclic color-permutation group \textit{P}=\{(12...p)\}, and Shubnikov antisymmetry is treated as 2-symmetry.

Signs and indexes ascribed to the points of a figure posses the extra geometrical sense with regard to the space in which the symmetry group acts; in additional dimensions the signs and indexes can be interpreted geometrically. From this result the possibility to use two-dimensional and three-dimensional P-symmetry groups for modeling certain categories of multidimensional symmetry groups.

The more detailed explanation of the ideas mentioned, the recent methods of applying two-dimensional and three-dimensional symmetry groups of rosettes, tablets and hyper-tablets, as well, as crystallographic and hyper-crystallographic P-symmetry to the study of multidimensional symmetry groups will be given in this communication.