

## **Markush Claims**

Currently, MyIPO does not have a specific manual or guidelines on construction of inventive step for Markush Claims and Enantiomer compound.

However, the current practice in MyIPO is similar to other IP offices.

Markush claims are often used in chemical cases where different functional groups may be substituted at various positions and expected to retain the same properties, e.g. biological activity.

In most cases, the general formula will contain a consistent core element that provides the basic activity while other parts of the molecule may vary depending on the types of substituents the person skilled in the art would consider could be accommodated in the molecule.

MyIPO is in the process of amending the Patent Act & Regulation and revising the guidelines. Special attention has been given to Markush type claims in the new guidelines and will be in force once the Patents Act & Regulations have been amended.

### **Inventive Step for Markush Type Claims In New Guideline:**

In the case that a claim is described either in a Markush form or as a subject matter comprising one selected among the group consisting of multiple alternative constituents, the claimed invention is not considered inventive if at least one embodiment of Markush alternatives appears not to involve an inventive step over the prior art.

In such cases, the applicant can overcome the grounds for rejection by simply deleting the Markush alternative for which claim is not allowable for lack of inventive step.

However, upon assessing the inventive step of such claims, precaution is needed not to generalize the effect of one selective embodiment to the entire scope of the claimed invention.

Example:

If the claimed invention relates to neuroprotective chromanol compounds including various chemical compounds as alternatives, all embodiments of the chemical compounds should have a remarkable effect over the prior art in order for the claimed invention to be granted.

Therefore, it is inappropriate to grant a patent for the whole invention merely based on the experimental data concerning the effect of the formula

(III) compound, which is the only alternative described in the specification, for being significantly effective in comparison with the prior art.

### **Enantiomers Compound**

For the enantiomer compound, the new guidelines have given a clear meaning regarding the compound enantiomer

Enantiomers are chiral molecules that are mirror images of one another. They have identical physical characteristics (energy, solubility in typical achiral solvents, boiling and melting points, NMR and IR spectra, etc.) except for their ability to rotate plane-polarized light (optical activity).

A 'racemic mixture' contains an equal amount of each enantiomer. The techniques applicable to separate enantiomers in a racemic mixture are well known.

They include the formation of diastereomeric salts and the use of chiral chromatography. Reactions can also be used (with chiral reagents or chiral catalysts) that are enantioselective.

Example:

(S)-(+)-lactic acid (left) and (R)-(-)-lactic acid (right) are nonsuperposable mirror images of each other.

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