

**Research on Patents Grant of Gene Related Research Tools:  
Focus on Review Procedure and Criteria of Gene Patents**

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**Abstract**

Research tools are necessities for scientists in researches. Especially gene related research tools, which always play important roles in gene treatment, gene diagnosis, pharmacogenomics, and other gene related researches. Gene materials and technologies, which are usually lack of substitution and are widely used in researches, are bases of following innovations. Once these research tools are patented, patent holders can affect following researches by licensing their patents or not. To avoid such influence to innovations, we discuss on the side of review guides of gene patents and on the side of utilization of gene patents. A proper review guide can avoid grant of improper gene patents; and utilization of patents focus on strict license terms that may substantially block further innovations. However there are many issues on both sides, we will discuss criteria of patent and review guides of gene related patents in this article only; utilization of gene patents will be discussed in another paper. On the side of patent review process, we focus on examination guidelines of novelty and non-obviousness, and scope of patent claims. There are usually further research on research tools, where rises a problem that if a applicant can broaden his patent claim to possible future

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