

BUTAMAX ADVANCED BIOFUELS, LLC v. GEVO, INC., Appeal No. 2013-1342 (Fed. Cir. Feb. 18, 2014). Before Rader, Linn, and Wallach. Appealed from D. Del. (Judge Robinson).

Background:

Butamax owns two patents with claims directed to (i) a host comprising DNA encoding polypeptides that catalyze the conversion of acetolactate ("AL") to 2,3-dihydroxyisovalerate ("DHIV"), wherein the polypeptide that catalyzes this conversion is acetohydroxy acid isomeroreductase ("KARI"), and (ii) a method of making isobutanol using this host. In order for KARI to function, a cofactor, such as nicotinamide adenine dinucleotide (NADH) or nicotinamide adenine dinucleotide phosphate (NADPH), is required.

Based upon a definition given in the specification, the recitation of a specific Enzyme Commission number (EC) number in the claims, and the prosecution history, the district court determined that the claims of each patent were limited to a KARI that was NADPH-dependent. In view of that claim construction determination, the district court granted Gevo's motion for summary judgment of noninfringement because Gevo's enzyme was NADH-dependent.

Issue/Holding:

Did the district court err in its claim construction? Yes, vacated and remanded.

Discussion:

The Federal Circuit found that there was nothing in the record to indicate that one of ordinary skill in the art would have understood the plain meaning of "KARI" to be limited to the use of NADPH as a cofactor. In addition, although the specification defined KARI as "an enzyme that catalyzes the conversion of [AL] to [DHIV] using NADPH," the Federal Circuit found that, at best, this definition only excludes KARIs that convert AL to DHIV without at least sometimes using NADPH. Furthermore, the Federal Circuit held that the disclosure of specific types of KARIs in the specification that are NADPH-dependent does not clearly express an intent to redefine KARI away from its plain meaning, or otherwise exclude the use of NADH as a cofactor.

Regarding the recitation of the specific EC number in the claims, the Federal Circuit noted that the EC database categorizes naturally occurring enzymes, and that new EC numbers are not created for mutants, such as Butamax's enzyme. In addition, the EC database links to a second database that contains a reference to a mutated form of KARI in which NADH substitutes for NADPH. Therefore, reciting the specific EC number did not limit the claims to NADPH-dependent enzymes. Based on the above, the Federal Circuit also found that there was nothing in the prosecution history of either application that expressed a clear intent to limit the claims to NADPH-dependent enzymes.