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(12) **United States Patent**
Liu

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(54) **FERULATE ESTERASE ISOLATED FROM *LACTOBACCILLUS FERMENTUM***

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(51) **Int. Cl.**

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C12N 15/00	(2006.01)
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C07K 1/00	(2006.01)

(52) **U.S. Cl.**
CPC ***C12N 9/18*** (2013.01); *C12Y 301/01073* (2013.01)

(58) **Field of Classification Search**
CPC C12N 9/18; C12Y 301/01073
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See application file for complete search history.

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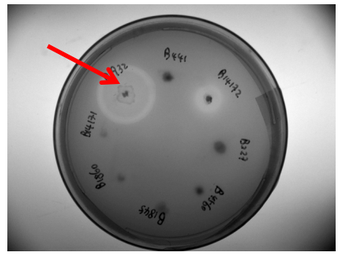
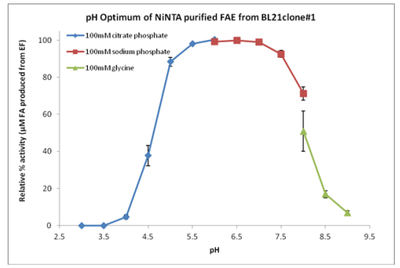
(57) **ABSTRACT**

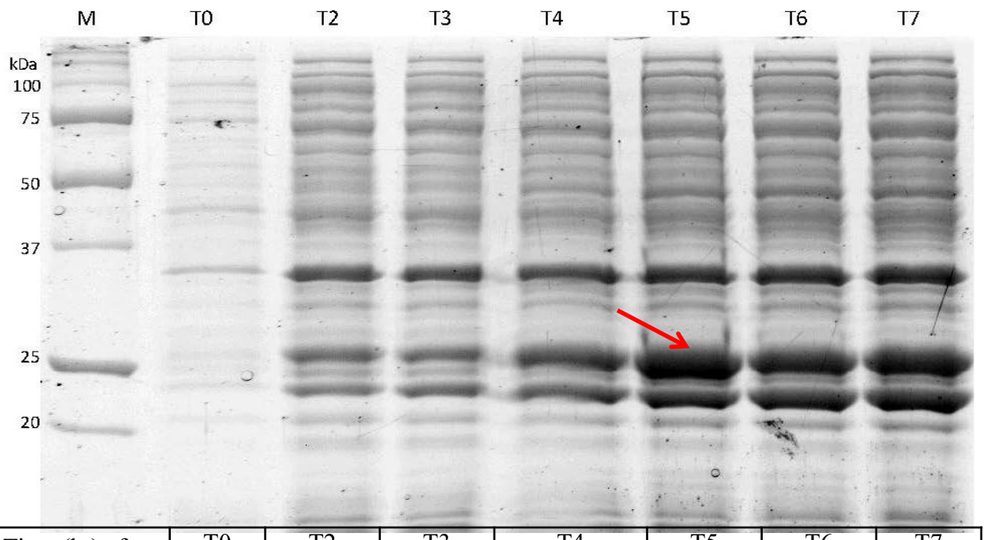
The cDNA and amino acid sequences of a ferulate esterase obtained from *Lactobacillus fermentum* NRRL B-1932 is determined. An expression vector for expression of the ferulate esterase gene is generated. The recombinate ferulate esterase gene and transcribed protein contains a linker sequence and 6×HIS tag for purification. Enzymatic activity of the recombinant protein is determined.

11 Claims, 6 Drawing Sheets

This novel recombinant ferulate esterase breaks down the cross link between lignin and hemicellulose in lignocellulosic biomass materials . This enzyme can be used for production of functional foods and animal feeds with high ferulic acid which has been proven to have antioxidant and anticancer properties.







Time (hr) after IPTG induction	T0	T2	T3	T4	T5	T6	T7
FAE (mU/mg)	3.81	13.85	34.57	31.44	29.89	**45.89**	30.22