CLAIMS:

1. A fermentation medium for production of a recombinant protein~~s~~, or ~~its~~ a derivative~~s~~ or analog~~s~~ thereof by improving phosphate uptake through fermentation using a methanol inducible fungal species, said medium characterized in that ~~the~~ a residual concentration of urea is maintained in ~~the~~ a range of about 0.3 M to about 1 M, ~~varying the concentrations of basal salts and trace elements from 0.1X to 5X of the control medium, and wherein the~~a methanol feeding rate ranges from about 6 g/L/h to about 20 g/L/h~~.~~, basal salts per liter comprising:

Phosphoric acid (85%): from about 2.67 ml to about 133.5 mL,

Calcium sulfate: from about 0.093 g to about 4.65 g,

Potassium sulfate: from about 1.82 g to about 91 g,

Magnesium sulfate-7$H_2O$: from about 1.49 g to about 74.5 g,

Potassium hydroxide: from about 0.413 g to about 20.65 g,

Glycerol: from about 4 g to about 200 g;

and

trace elements per liter comprising:

Cupric sulfate.5 $H_2O$: from about 0.6 g to about 30 g,

Sodium iodide: from about 0.008 g to about 0.4 g,

Manganese sulfate- $H_2O$: from about 0.3 g to about 15 g,

Sodium molybdate-2 $H_2O$: from about 0.02 g to about 1 g,

Boric Acid: from about 0.002 g to about 0.1 g,

Cobalt chloride: from about 0.05 g to about 2.5 g,

Zinc chloride: from about 2 g to about 100 g,

Ferrous sulfate-7 $H_2O$: from about 6.5 g to about 325 g,

Biotin: from about 0.02 g to about 1 g, and

Sulfuric Acid: from about 0.5 ml to about 25 ml.

2. The fermentation medium as claimed in claim 1, wherein the urea is selected from the group ~~comprising~~ consisting of urea, ~~or its~~a ~~derivatives~~ derivative of urea, ~~such as~~ dimethylurea, diethylurea, N-acetylphenyl urea, isopropylpylideneurea, phenylurea ~~or~~ and a combination thereof; and wherein the urea is added in liquid, spray, powder or pellet form.

~~3. The fermentation medium as claimed in claim 1, wherein the urea is added in liquid, spray, powder or pellet form.~~

~~4.~~3. The fermentation medium as claimed in claim 1, wherein the methanol inducible fungal species expressing the recombinant ~~insulin product are~~protein is selected from the group ~~comprising~~ consisting of *Pichia pastoris*, *Pichia* sp., *Saccharomyces* sp., *Saccharomyces cerevisiae*, *Kluyveromyces* sp., ~~or~~ and *Hansenula polymorpha*.

~~5. A fermentation medium for production of recombinant proteins, their derivatives or analogs thereof by improving phosphate uptake through fermentation using microorganisms, said medium comprising residual concentration of urea ranging from about 0.5 g/L to about 3 g/L to yield a maximum product titre of above 0.5 g/L.~~

~~6. A fermentation medium for the production of secondary metabolites by improving phosphate uptake through fermentation using microorganisms, said medium characterized in that the medium comprises residual concentration of urea ranging from about 0.5 g/L to about 3 g/L effectuating bioconversion of compactin to pravastatin by at least 35%..~~

~~7. The fermentation medium according to claim 5 or claim 6, wherein the urea is selected from the group comprising urea or its derivatives such as dimethylurea, diethylurea, N-acetylphenyl urea, isopropylpylideneurea, phenylurea or combination thereof.~~

~~8. The fermentation medium according to claim 5 or 6, wherein the urea is added in liquid, spray, powder or pellet form.~~

~~9. The fermentation medium according to claim 6, wherein the micro-organisms are selected from the group comprising E.coli, Streptomyces sp, Aspergillus sp, Rhizopus sp, Penillium sp and Rhizomucor sp.~~

~~10.~~4. A process for production of recombinant protein~~s, its~~ or a derivative~~s~~ or analog~~s~~ thereof in the fermentation medium of Claim 1, ~~which~~ said process ~~comprises~~ comprising the steps of:

a) propagating a methanol inducible ~~insulin expressing~~ fungal species ~~by improving phosphate uptake through fermentation~~in said medium, and

b) ~~said medium comprises a~~maintaining the residual concentration of urea ~~maintained~~ in ~~the~~ a range of about 0.3M to about 1M for production of said recombinant protein~~, to yield a maximum product titre of above 0.1 g/L~~.

~~11.~~5. The process as claimed in claim ~~10~~4, wherein the urea is selected from the group ~~comprising~~ consisting of urea, ~~or its~~a derivative~~s~~ of urea, ~~such as~~ dimethylurea, diethylurea, N-acetylphenyl urea, isopropylpylideneurea, phenylurea, ~~or~~ and a combination thereof.

~~12.~~6. The process according to claim ~~10~~4, wherein the recombinant protein produced is precursor of IN-105.

~~13.~~7. The process as claimed in claim ~~10~~4, wherein the recombinant protein produced is an insulin precursor, insulin or their analogues or derivatives thereof.

~~14.~~8. The process as claimed in claim ~~13~~7, wherein the recombinant ~~insulin product~~ protein produced is ~~insulin~~ a precursor of glargine.

~~15.~~9. The process according to claim ~~10~~4, wherein the recombinant protein produced is a cyclic or non-cyclic peptide.

~~16.~~10. The process as claimed in claim ~~15~~9, wherein the recombinant protein produced is the precursor ~~is~~ of exendin.

~~17.~~11. The process as claimed in claim ~~10~~4, wherein the recombinant protein produced is an enzyme.

~~18.~~12. The process as claimed in claim ~~17~~11, wherein the recombinant protein produced is lipase.

~~19.~~13. The process as claimed in claim ~~10~~4, wherein the recombinant protein produced is selected from ~~a~~ the group ~~comprising~~ consisting of an insulin precursor, an insulin precursor derivative or analog, insulin, an insulin derivative or ~~their~~ analog~~ues~~, precursor ~~or derivatives thereof,~~of glargine, precursor of exendin, carboxypeptidase and lipase, and wherein the methanol inducible fungal species expressing the recombinant insulin product are selected from the group comprising *Pichia pastoris*, *Pichia* sp., *Saccharomyces* sp., *Saccharomyces cerevisiae*, *Kluyveromyces* sp., or *Hansenula polymorpha*.

~~20. The process as claimed in claim 10, wherein the methanol inducible fungal species expressing the recombinant insulin product are selected from the group comprising Pichia pastoris, Pichia sp., Saccharomyces sp., Saccharomyces cerevisiae, Kluyveromyces sp., or Hansenula polymorpha.~~

~~21.~~14. The process as claimed in claim ~~20~~4, wherein the methanol inducible fungal species is Pichia pastoris.

~~22.~~15. The process as claimed in claim ~~10~~4, wherein the methanol feeding rate is up to 20 g /L of broth per h.

~~23. A process for production of recombinant or non-recombinant protein products, their derivatives or analogs thereof which comprises propagating an inducible or non-inducible protein expressing microorganism by improving phosphate uptake through a fermentation medium, said medium comprising a residual concentration of urea ranging from about 0.5 g/L to about 3 g/L to yield a maximum product titre of above 0.5 g/L.~~

~~24. The process according to claim 23, wherein the urea is selected from the group comprising urea or its derivatives such as dimethylurea, diethylurea, N-acetylphenyl urea, isopropylpylideneurea, phenylurea or combination thereof.~~

~~25. The process according to claim 23, wherein the recombinant protein product produced is G-CSF.~~

~~26. The process according to claim 23, wherein the recombinant protein product produced is streptokinase.~~

~~27. The process according to claim 23, wherein the protein product is lipase.~~

~~28. A process for production of secondary metabolites by fermentation using microorganisms by improving phosphate uptake through a fermentation medium, said medium characterized in that the medium comprises residual concentration of urea ranging from about 0.5 g/L to about 3 g/L effectuating bioconversion of compactin to pravastatin by at least 35%..~~

~~29. The process according to claim 28, wherein the secondary metabolite produced is pravastatin.~~

~~30. The process according to claim 28, wherein the urea is selected from the group comprising urea or its derivatives such as dimethylurea, diethylurea, N-acetylphenyl urea, isopropylpylideneurea, phenylurea or combination thereof.~~