

**Decisions taken in the 56th Meeting of the Genetic Engineering Approval Committee (GEAC) held on 8 June 2005.**

The 56<sup>th</sup> Meeting of the Genetic Engineering Approval Committee was held on 8<sup>th</sup> June 2005 at 2.30 PM in the Ministry of Environment and Forests under the Chairmanship of Shri Suresh Chandra, Special Secretary & Chairman GEAC.

**Decisions**

**1.0 Permission for import of TBC –M4 (a preventive recombinant AIDS vaccine) from USA by Tuberculosis Research Centre (M/s Indian Council of Medical Research), Chennai.**

1.1 The Committee noted that the present application dated 24.3.2005 is for limited import of TBC-M4 vaccine and placebo (PBS/10% glycerol) for use in clinical trial in India. The phase I clinical trial of TBC –M4 is planned at Tuberculosis Research Center, Chennai as per the memorandum of understanding signed between NACO, ICMR and IAVI in December 2000 to facilitate the development of safe, effective and accessible AIDS vaccine and carry out clinical trials in India.

1.2 After detailed deliberations and taking into consideration, the views expressed by the expert members and recommendation of DBT, the Committee recommended the import of TBC –M4 vaccine from USA for conducting Phase –1 trial at Tuberculosis Research Centre, Chennai.

**2.0 Import of Denimax 16000 L by M/s Luminis Biotech Pvt. Ltd, Mumbai from M/s Novozymes, Denmark.**

2.1 The Committee noted that the present application dated 25.3.2005 is for import of Denimax-16000 L, a concentrated Cellulase enzyme produced by M/s. Novozymes. The Committee noted that the purpose of import is for value addition and subsequent export.

2.2 The Committee gave an opportunity to the applicant to present their views. During the deliberations the Committee sought clarifications regarding the kind of value addition proposed, the presence / absence of microorganisms in the end product and the measures for controlling the formation of aerosol during the process of value addition. The Committee advised the applicant to submit the above clarifications in writing.

2.3 During the meeting, the Member Secretary placed before the Committee, the clarifications submitted by the Company in writing. The Committee noted that written reply was found to be lacking in terms of the proposed value addition and clarity on certification. The Committee advised the Member Secretary to seek the relevant information from the Company and subject to satisfactory submissions; the proposal may be accorded approval. The Committee also advised that the following conditions stipulated while according approval for DeniMax 399S in the meeting held on 10.2.2005 may be stipulated in this case also.

- a) The DGFT would monitor the quantity of import and subsequent export after value addition.
- b) The DGFT should direct the Company to follow 'Rules 1989' and obtain approval of GEAC prior to such imports in future.

**3.0 Import of Aquazyme Ultra 1200 L by M/s Luminis Biotech Pvt. Ltd, Mumbai from M/s Novozymes, Denmark.**

3.1 The Committee noted that the present application dated 25.3.2005 is for import of Aquazyme Ultra 1200 L, a concentrated Amylase enzyme produced by M/s. Novozymes.

3.2 The Committee concluded that the above request is similar to the request made by the applicant in agenda item no. 2.0 and therefore, the clarifications submitted by the applicant and decision taken therein would be applicable in this case also.

**4.0 Import of Denimax Acid XCL by M/s Luminis Biotech Pvt. Ltd, Mumbai from M/s Novozymes, Denmark.**

4.1 The Committee noted that the present application dated 25.3.2005 is for import of Denimax Acid XCL, a concentrated Cellulase enzyme produced by M/s. Novozymes.

4.2 The Committee concluded that the above request is similar to the request made by the applicant in agenda item 2.0 and 3.0 and therefore, the clarifications submitted by the applicant and decision taken therein would be applicable in this case also.

**5.0 Permission to import r- Natrecor formulations to conduct Phase-III Clinical trials (fusion II Study) from U.K. by M/s Synchron Research Services Pvt. Ltd. Ahmedabad.**

5.1 The Committee noted that that the present application dated 5.4.2005 is for import of r-Natrecor formulations to conduct phase III clinical trials in India. While the product will be tested on Indian patients, the data generated is basically for overseas submission, as the product is not meant for marketing in India.

5.2 After detailed deliberations and taking into consideration that the product is not meant for use within the country and that there have been several adverse reports about the product, the Committee concluded that only products well established for their safety and efficacy and meant for use in the country should be considered for clinical trials. Accordingly the Committee rejected the request for conduct of phase III clinical trials of r- Natrecor formulation in India.

**6.0 Permission for import and marketing of 16 IU LG Eutropin (human Growth Hormone) by L.G. Chemical Pvt. Ltd. New Delhi.**

6.1 The Committee noted that the GEAC in its meeting held on 5th July 2002 had approved the import and marketing of 4 IU L.G. Eutropin tm in India subject to condition that surveillance data on not less than 100 subjects within a period of 2 years shall be conducted. The company's present request is for import and marketing of the same product having a higher strength (16 IU LG Eutropin tm).

6.2 After detailed deliberations and taking into consideration the recommendations of the DBT, DCGI and Expert Member, the Committee accorded approval to the proposal subject to DCGI clearance.

**7.0 Revalidation of GEAC clearance for manufacture and marketing of recombinant Hepatitis B Vaccine by M/s Wockhardt Ltd, Mumbai.**

7.1 The GEAC in its meeting held on 7.9.1999 had approved the manufacture and marketing of recombinant Hepatitis B Vaccine. As per the requirement under Rule 13 (2) of the 1989 Rules, the firm has requested for revalidation of the GEAC permission for import and marketing of the product in India for a further period of 2 years.

7.2 The Committee conveyed their 'No Objection' for revalidation of the GEAC approval.

**8.0 Revalidation of GEAC clearance for manufacture and marketing of recombinant Erythropoietin by M/s Wockhardt Ltd, Mumbai**

8.1 The GEAC in its meeting held on 7.9.1999 had approved the manufacture and marketing of recombinant Hepatitis B Vaccine. As per the requirement under Rule 13 (2) of the 1989 Rules, the firm has requested for revalidation of the GEAC permission for import and marketing of the product in India for a further period of 2 years.

8.2 The Committee conveyed their 'No Objection' for revalidation of the GEAC approval.

**9.0 Permission for scale up of r-insulin glargine to 300 L fermenter for R&D work and conduct of Phase –III clinical trials of r insulin (Glargine) by M/s Wockhardt Ltd, Mumbai**

9.1 The Committee noted that the present request dated 30.3.2005 is for conducting Phase –III clinical trials of r insulin (Glargine) in India and scale up of r-insulin glargine to 300 L fermenter for R&D work at Wockhardt Biotech Park, M.I.D.C. Waluja, Aurangabad.

9.2 After detailed deliberations and taking into considerations the views of DBT / RCGM and Expert Member and noting that the GEAC had earlier approved import as well as manufacture of r-insulin Glargine by various companies, the Committee approved the request for conduct of Phase-III clinical trials

9.3 The Committee also approved the scale-up operations to 300 L fermenter for R & D work.

**10.0 Permission for scale up of r- insulin Lispro to 300 L fermenter for R&D work and conduct of phase III of r- Insulin Lispro (r-DNA origin) by Wockhardt Ltd. Mumbai**

10.1 The Committee decided to await the comments of the Experts. Decision on the proposal was therefore deferred.

**11.0 Permission to scale up of r- Insulin produced by Pichia pastoris R & D work to 300 L fermenter by Wockhardt Ltd. Mumbai**

11.1 The Committee decided to await the comments of the Experts. Decision on the proposal was therefore deferred.

**12.0 Permission for conducting phase III clinical trials on r-h FSH 75 I.U. (75 I.U. per vial) Recombinant Human Follicle Stimulating Hormone by M/s. Bharat Serum and Vaccine Ltd. Mumbai.**

12.1 The Committee decided to await the comments of the Experts. Decision on the proposal was therefore deferred.

**13.0 Permission for import and marketing of r-human Granulocyte Macrophage Colony stimulating factor in (GM – CSF) by Emcure Biotech Ltd. Pune, from Shanghai Hygiene Biopharma Company Ltd. China.**

13.1 The Member Secretary informed the Committee that the GEAC in its 27<sup>th</sup> meeting held on 27.11.2003 had approved phase III clinical trials of r-human Granulocyte Macrophage Colony stimulating factor in (GM – CSF) from Shanghai Hygiene Biopharma Company Ltd; China. The present application dated 10.5.2005 is for import and marketing of r-human Granulocyte Macrophage Colony stimulating factor in (GM – CSF) from Shanghai Hygiene Biopharma Company Ltd; China from the same source.

13.2 The Committee decided to await comments of the Experts. Decision on the proposal was therefore deferred.

**14.0 Permission to export limited quantity seed of transgenic cotton containing 'vip 3A' insect-resistance gene Event COT-202 for research purposes to Burkina Faso, Africa Permit by M/s Syngenta Seeds India Pvt. Ltd.**

14.1 After detailed deliberations the Committee decided to obtain the following information:

- a. The purposes of import of *vip* 3 A gene from USA as per the original application.
- b. Details of the source of Indian material into which the *vip* 3 a gene has been transferred.
- c. Geographical indication of the background into which the *vip* 3 A gene has been transferred.
- d. Justification for withdrawing the product from large scale testing.
- e. Comments of NBA on whether the proposal is compliant with the Biodiversity Act.

14.2 Decision on the above request was therefore deferred.

**15.0 Permission for large scale field trials and seed production of Tulasi –9 Bt by M/s Tulasi Seeds Pvt. Ltd.**

15.1 The Committee concluded that the proposal is premature for consideration at this stage since multi-locational trials under RCGM have not been conducted. In accordance with the decision taken in the 54<sup>th</sup> and 55<sup>th</sup> meeting held on 3.5.2005 and 20.5 2005, the Committee directed the applicant to approach RCGM for conduct of multi-locational trials.

## Policy Issues

### 1.0 Representation from Seed Industry /Associations.

1.1 The Committee gave opportunity to J.K. Agri Genetics, All India Crop Biotechnology Association and Seed Industry Associations for presenting their views on the decision taken by the GEAC in the meeting held on 3.5.2005 and as modified in the meeting held on 20.5.2005. The issues raised by them are summarized below:

- a) One year of Large Scale Trials is adequate irrespective of the fact that the hybrid /variety is a notified or un-notified variety.
- b) The first year ICAR trials should be initiated along with the RCGM multi-locational trials. This would reduce the testing period from three years to two years. In View of the large number of entries for ICAR trials, the industry gave an assurance that they shall apply a self-regulations limiting hybrids to three per event/zone/Company. The industry is also willing for sharing of infrastructure through a public and private partnership.
- c) Seed production of 100 ha may be permitted during the first year of large scale trials so as to ensure that adequate seed is available for commercialization if

approved by the GEAC based on first year trials. At the rate of 300 packets per acre, the availability of seeds from an area of 20 acres would not exceed 6000 packets. This is not adequate for commercial release. For a commercially viable proposition, the minimum quantity required is one lakh packets per hybrid per zone.

- d) The prescribed 80 locations for LST by the GEAC needs to be revisited and reduced depending on the Zonal acreage.
- e) The revised protocol for LST is voluminous. Since most of the data is generated during RCGM and ICAR trials, the focus of data generation during LST should be only on target pest (bollworms) and only limited data should be collected for sucking pest /beneficial insects. The test sites for agronomic and fiber data should also be limited.
- f) Prescribed and standard protocols for DNA fingerprinting need to be developed.
- g) Permit the use of any non-Bt variety /hybrid of farmers choice as refuge.
- h) The term "approved event" should be defined.

1.2 In addition to the above issues, J.K. Agri Genetics requested the Committee to revise their decision for limited seed production and permit them 100 ha seed production during the first year LST. They pointed out that irrespective of new event /gene /commercial released event the GEAC has permitted seed production in an area of 100 ha during the 13.4.2005 and in the previous meetings during 2004. They further pointed out that Cry 1 Ac gene has proven to be safe and in the instant case the Company has completed all the biosafety studies as directed by the RCGM. J.K. seeds has only four hybrids approved for LST of which some of them have already completed one year of ICAR trials during kharif 2004 and by kharif 2005 they would have completed two years of ICAR trials and one year of LST under GEAC. Urging the GEAC to encourage indigenous technology, it was requested that even though the hybrids developed by J. K. Agri Genetics contains an a new event (with Cry 1 Ac gene), they may be considered for commercial release based on one year LST and to make the proposition commercially viable, seed production in an area of 100 ha may be permitted at this stage.

1.3 The Committee deliberated on the above issues and was of the view that the issue of seed production and ICAR trials merits reconsideration at this stage whereas the other issues can be referred to the Sub-Committee as decided in the previous meetings held on 3.5.2005 and 20.5.2005.

1.4 The Committee noted that as per the revised decision of 20.5.2005, for approved events, the need for further trials or otherwise will be considered by the GEAC based on first year trial data and accordingly seed production in an area of 20 acres was approved. View were expressed that the seed production in an area of 20 acres will not be adequate for commercial release and therefore the matter needs reconsideration. Views were also expressed as to what would happen to the seeds of those hybrids / varieties that are not subsequently approved for commercial release. Some Members expressed serious apprehensions about enforcement mechanism entrusted with responsibility to ensure that seeds of unapproved varieties do not enter the market. After detailed deliberations, the Committee concluded that the earlier decision of permitting upto 100 ha during the first year LST may be restored pending the finalization of the recommendation of the Sub-Committee.

1.5 In the case of new events, it was decided that inline with the previous decisions of the GEAC and in view of the recommendations of the Swaminathan Committee it was decided to continue with the decisions of two year LST. However this matter could also be referred to the Sub-Committee for a fresh look in to the matter. On the issue of seed production, it was decided that for new events seed production in an area of upto 10 ha may be permitted for the first year LST.

1.6 The Committee also considered the requests received for conduct of ICAR trials in tandem with the RCGM multi-locational trials. The Member Secretary informed that, the GEAC has already taken a decision in the meeting held on 9.6.2004 that the ICAR trials shall henceforth be initiated in tandem with the large-scale trials and not prior to it. The basis for this decision was that only those hybrids, which have been approved by MEC based on the multi-locational trials under RCGM, are eligible for entering into LST under GEAC and subsequent consideration for commercialization. Therefore, the hybrids recommended by MEC and approved by the GEAC for LST only need to enter ICAR testing. This decision was further reiterated in the GEAC meeting held on 13.4.2005.

1.7 After detailed deliberations, the Committee took the view that decision of the GEAC to approve ICAR trials should stand till the Sub-Committee has reviewed the matter. On the list received from RCGM, which was forwarded by ICAR to the GEAC, it was informed by the Member Secretary GEAC that most of these hybrids have not been recommended by MEC and therefore cannot enter ICAR trials. She was advised to inform accordingly.

## **2.0 Schedule and frequency of GEAC meetings.**

2.1 Referring to the "Good Practices in Environmental Regulations" adopted by the GEAC, the Chairman GEAC pointed out that meetings were being held every month and to the extent feasible on every second Wednesday of the month. Considering the large number of proposals received and the time constraints experienced by the experts for evaluation of the proposals, he sought the opinion of the Committee on whether the meetings could be held every alternate month. He suggested that where issue of seasonality is involved for example in case of agricultural crops, the meetings may be held every month. Accordingly he proposed that from March to June the meetings could be held every month and for the remaining period every alternate month. The Committee after some deliberations endorsed the views of the Chairman.

2.2 Accordingly the next meeting is scheduled for 10<sup>th</sup> August 2005.

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