

ICAR-National Dairy Research Institute, Karnal-132001
National Collection of Dairy Cultures, Dairy Microbiology Division

NCDC Culture procurement and Deposition Forms with Guidelines

COST OF NCDC CULTURES

The cultures categorized under "General Deposits" are accessible for supply to stakeholders upon payment, following the submission of all necessary documents. Cultures intended for safe deposit by the depositor incur applicable charges.

(A) Cost of NCDC Cultures for Academic Organizations/Other Institutes (Govt. Agency)/Private Sector/Industries:

Rs. 2500+12% GST per culture vial

(B) Cost of NCDC Cultures for ICAR-NDRI Scientist/Students/Staff:

Rs. 500+ 12% GST per culture vial

(C) Cost of Innovative Cultures (Technology-Associated), Limited to Buyers as per MOU Clause:

Rs. 7000+ 18% GST per culture vial

(D) Deposition Charges of Cultures to NCDC under Safe Deposit:

Rs. 2000+ 12% GST per culture

Guidelines for Deposition of Cultures to NCDC

- All the correspondence regarding the deposition should be made by the research Supervisor/Scientist/Faculty/Head of the department. The queries and correspondences by the students/research scholars and other staff will not be entertained.
- The cultures should be sent only after prior approval from the Scientist In-charge of NCDC for the process. Cultures sent without confirmation from In-charge NCDC will not be accepted for deposition.
- We accept only cultures belonging to BSL-1 and BSL-2 level.
- The information such as proposed name (taxonomic identification till genus or species level) of the cultures, good quality sequences [ab1/text file of 16S rRNA gene sequence (around 1400 bp) in case of bacteria and D1 D2 domain of LSU of rDNA / ITS-5.8S rRNA in case of Fungus & Yeast), available phenotypic and genotypic data should be sent to the scientist In-charge of the specific department to take prior approval for the deposition.
- The decision regarding the feasibility of deposition of the cultures will be decided by In-Charge NCDC , D.M. Division, Lab. No. 112, ICAR-NDRI, Karnal-132001 depending upon the availability of similar strains at NCDC and/or if any appropriate (i.e. enzyme activity etc) factors.
- The culture data sheet for the deposition is available at NDRI website (<https://www.ndri.res.in>). After the confirmation from concerned scientist, duly filled data sheets (scanned with sign and seal of depositor) along with the culture (as given below) should be sent to the In-Charge NCDC, ICAR-NDRI, Karnal-132001.
- The cultures under other repository deposit will be accepted by NCDC for submission after receiving the detailed information and obtain consent/NOC from original repositories.
- The depositor and the Duly Authorized Signatory of the depositor's Institution, whichever represents the legal owner of the material, hereby gives NCDC ownership in their interest in the transferred quantity of material, with the right, including the right under any patent or patent application, should there be one, to reproduce, use, give or otherwise transfer material to third parties in any manner under General deposition.
- The NCDC cultures under safe deposit category will be deposited for five years after deposition of fee. After completion of five year, the depositor needs to pay safe deposition fees again to maintain the culture in the same category. The NCDC will ask for resubmission of culture to depositor by mail. As per their consent the culture will be resubmitted under same category or destroyed or shifted to general deposition category. Non reply of mail by the depositor will be considered as to shift it to general deposit category.
- Pure cultures should be sent in active form in duplicates in the form of agar plates/ slants /stabs.
- Packaging of the culture(s) should be done properly to avoid any physical damage during the transportation. Contact details of the In-charge NCDC for culture deposition are given below.

Dr. Pradip Behare
In-Charge NCDC
D.M. Division
ICAR-NDRI, Karnal-132001
Contact No. +91-184-2259198
Email-ncdc.ndri@icar.gov.in

Deposit/Accession Form

**National Collection of Dairy Cultures (NCDC)
Dairy Microbiology Division
ICAR-National Dairy Research Institute
Karnal-132001**

For Official use only

B **Y** **M**

Accession Date:

1. **Scientific of Organism:**

2. **Synonym:**

3. **Classification:**

Order:

Family:

4. **Is this the type strain of this organism?**

YES

NO

5. **Other collections numbers:**

If yes, please cite the reference:

6. **Origin of the strain (please give as much information as possible)**

Source of isolation:

Geographical area:

Isolated by (date):

Identified by (date):

Culture Designation:

If there is any literature in reference to the above items, please cite it (them):

7. **Method of Identification & Conformation:**

(a) *Morphological*

(b) *Biochemical*

(c) *Genetic*

(i) *16s rRNA* (ii) *Whole Genome* (iii) *Any other*

(d) *Additional Features*

8. Particular Uses of the Strain:

Production of:

Ref.:

Degradation of:

Control of:

Ref.:

Assay of:

Ref.:

New taxon:

Ref.:

Other:

Ref.:

9. Is the strain dangerous to health & environment?

(a) *Zoopathogenic* (b) *Phytopathogenic* (c) *Unknown*

10. Safety information: Is this organism hazardous to:

Humans ----- -Animals ----- - If yes, what is the recommended

Biosafety Level -----

11. Maintenance and Preservation:

Medium (give formula, use additional sheet if necessary):

Temperature:-----pH-----Incubation time-----

12. Oxygen relationship:

(a) *Aerophilic* (b) *Microaerophilic* (c) *Facultative anaerobic* (d) *Anaerobic*

Special Conditions:-----

13. Reason for deposition:

(a) *To obtain NCDC No.*

(b) *Academic /Research Purpose*

(c) *To Preserve & maintain*

(d) *any unique character/ special features*

14. The form of culture at the time of deposition

(a) *Liquid form*

(b) *Agar/Slant/ Petri plate*

(c) *Dried form*

(d) *Any other*

15. distribution rights & details about deposition Category:

(i) **Depositor conveys ownership of the deposited material to NCDC as a general deposit**

The depositor and the duly authorized signatory of the depositor's institution, whichever represents the legal owner of the material, hereby gives NCDC ownership in their interest in the transferred quantity of material, with the right, including the right under any patent or patent application, should there be one, to reproduce, use, give or otherwise transfer material to third parties in any manner.

**(ii) Depositor conveys ownership of the deposited material to NCDC as an Innovative Culture/
Technology transfer**

Material will require execution of an agreement for distribution for commercial purposes by recipient that incorporates or otherwise uses the material. The material will not be free for distribution for research & teaching. The distributor and the duly authorized signatory of the depositor's institution, whichever represents the legal owner of the material, hereby conveys to NCDC rights to the transferred quantity of material with the authority to reproduce, use, give or otherwise transfer material to third party. The terms of such transfer to third party will be negotiable between NCDC and depositor under the separate agreement.

(iii) Safe deposit

The depositor does not grant NCDC any material distribution rights. The material shall be maintained in the repository for which a five year fee will be levied for each organism deposited.

(iv) Other Repository Deposit

The material will be free for distribution for research & teaching and transfer to third party. This category deposits the culture/ material from national or international collection centre.

16. Name of depositor:

17. Address of depositor:

Phone/Mobile No.:

Fax:

Email:

18. Deposition category:

(a) *General deposit*

(b) *Other repository deposit*

(c) *Safe deposit*

(d) *Innovative culture*

deposit

19. For Safe Deposition Category:

(a) Period for safe deposition of culture:

(b) Five year safe deposition fee for one culture: Rs. 2000/

(c) GST @ 12% on safe deposition fee for one culture: Rs. 240/-

- (d) Total five year safe deposition fee for one culture: Rs. 2240/-
- (e) No. of cultures for safe deposition:
- (f) Safe deposition fee for cultures:
- (g) GST @ 12% on safe deposition fee for cultures:
- (h) Total safe deposition fee for - - - - - cultures:

I/We hereby authorize NCDC to accession the culture in its general deposit/other repository deposit/ safe deposit/ innovative culture deposit and to distribute it on request.

Depositor's Sign with Date

Sign with Seal Head of the Institute /
In-charge of Depositor's/ H.O.D

20. FOR NCDC USE ONLY Remarks if any:

NCDC Accession Number:

Processed by: _____ **Date:** _____ **Signature:** _____

Supervised by: ----- **Date:** ----- **Signature:** -----

Entry in Database: Date _____ **By:** _____

MATERIAL TRANSFER AGREEMENT
Between
National Collection of Dairy Cultures (NCDC)
ICAR-National Dairy Research Institute, Karnal

(A constituent of the Indian Council of Agricultural Research (ICAR), 1, Dr Rajendra Prasad Road, Krishi Bhawan, New Delhi- 110 001)

And

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1. In reference to the request from Dr./Mr./Ms. _____, vide email dated, the NCDC, NDRI agrees to transfer _____ to _____
 2. The use of the material is limited to **the research & teaching & commercial purpose (According to General Deposition and Other Repository Deposition category) at -----** -----. Any deviations from the permitted use shall require a new prior informed consent/MTA with the NCDC, NDRI. The agreement also applies to variations of the material. Place of performance will be the registered office of the sending institute. The beneficiary will bear the shipping risk and cost. The beneficiary acquires ownership of the material after delivery.
 3. The beneficiary agrees to use the material **in compliance with all applicable laws and ordinances, as well as any other applicable regulations and safety rules**. The beneficiary ensures that it obtains all necessary authorization from the regulatory authorities and will submit it on request. Transfer of the material or parts or variations thereof is permitted only if agreed upon in a separate agreement.
 4. The NCDC, NDRI shall not be liable for the fitness for use or for certain features of the material. In addition, the NCDC, NDRI will not be liable if any, harm due to use of the material. during transfer and handling will be responsibility of receiving party. Therefore, the beneficiary is obliged to observe and to comply with any information or measure of conduct amended in the annex to this agreement. Especially, the receiving party will not misuse the biological material/ culture. And shall be used for intended purpose. The NCDC, NDRI declares that it is not aware of rights of third parties that would limit the right to work with the material for the said purposes. The beneficiary agrees to keep strictly confidential all information marked as confidential, even after expiration of the contract, and especially not to pass the information/material on to third parties.
 5. The beneficiary grants the NCDC, NDRI the right of use of results for research purposes. This shall also include the right to use the results in research and development cooperation. All descriptions of the original material in the declarations require the prior written consent of NCDC, NDRI. Otherwise reference shall be made that the material was provided by NCDC, NDRI.
 6. This agreement shall be governed by Indian law. Place of jurisdiction shall be the Delhi High Court. The directors of both parties shall endeavour to settle any dispute amicably before referring it to a court of law. In the event of any dispute or difference related to the interpretation and application of the provisions of this agreement, such dispute or difference shall be referred

to by either party to the arbitration. The arbitrator will be appointed by the Director General (ICAR).

7. Both contracting parties, NCDC, NDRI and -----, shall be obliged to comply with the MTA.
8. The agreement will remain in force till the transferred material shall be used for the intended purpose mentioned at SI No. 2 above.

[*Monetary benefits may include anyone or more than one of the following; (i) Fees, (ii) Up-front payment, (iii) Milestone payment, (iv) Royalty payment, (v) Licence fees in case of commercialization, (vi) Salaries and preferential tenus where mutually agreed, (vii) Research funding, (viii) Joint ventures, (ix) Joint ownership of relevant IPRs, etc. Similarly, non-monetary benefits may include, (i) Sharing of research results, (ii) Collaboration, cooperation and contribution in scientific/R&D programmes, education and training, (iii) Participation in product development, (iv) Strengthening capacity for technology transfer, (v) Institutional capacity building, (vi) Access to relevant scientific information, including inventories and databases, (vii) Research directed towards priority needs, e.g. food and nutritional security, (viii) Joint ownership of relevant IPR.]

For NCDC

For Beneficiary

Director
ICAR-NDRI

Head of the Organization

Date:

Date:

Place:

Place:

Annex to the Material Transfer Agreement

Declaration concerning measures of performance

The signing of the above mentioned agreement includes the obligation to adhere the following measures of performance:

By taking possession of the material the beneficiary ensures to use the material in compliance with all applicable laws and ordinances, as well as any other applicable regulations and safety rules. In general, contamination of material cannot be excluded, although appropriate measures and tests and adequate care have been applied.

For NCDC

For Beneficiary

Director
ICAR-NDRI

Head of the Organization

Date:

Date:

Place:

Place:

NCDC Culture Procurement Form

INSTITUTION'S DETAILS (Fields marked with an * are required)

Delivery to:

Institution Name:

GST Number:

Address:

City:

State/Country:

Postal/ Zip code:

Contact name*:

Tel*:

Fax:

Email*:

Invoice to: (If different)

Institution Name:

Address:

City:

State/Country:

Postal/Zip Code:

Contact Name:

Tel:

Fax:

Email:

My Institution is Commercial Academic/Non Profit making

Culture Purchased from the Category:

(a) General Deposit

(b) Other Repository Deposit

(c) Innovative Culture Deposit

Order Details

Order Date

Date Required

Delivery Method

Speed-Post

by Hand

Cultures Requirement

Purpose for the Culture requirement*:-

S. No.	Organism Name	Accession No.	Quantity

For cultures general deposit & other repository deposit category:

Cost of one ampoule 2500/-

GST @ 12% for one ampoule 300/-

Total cost of one ampoule 2800/-

Total No. of cultures required

Cost of culture

GST @ 12% for cultures

Total cost of cultures

For innovative culture deposit category: (Only to buyer of technology)

Cost of one ampoule 7000/-

GST @ 18% for one ampoule 1260/-

Total cost of one ampoule 8260/-

Total no. of cultures required

Cost of culture

GST @ 18% for cultures

Total cost of cultures

Undertaking

The NCDC culture nos. ----- will be exclusively used for research & development in Company/ M. Tech./ Ph. D Projects entitled -----

----- . Further these cultures will not be distributed or used for any other project.

(Signature of H.O.D. with Seal/Managing Director/ Incharge)

NCDC Culture Procurement Form for NDRI Students/Scientists/Staff Only

Indent No.

Date:

Purpose for the culture requirement:

Undertaking

The NCDC culture nos. ----- will be exclusively used for IRC/Externally funded/ M. Tech./ Ph. D Projects entitled -----

-----IRC/Externally funded project no.* ----- . further these cultures will not be distributed or used by the indenter for any other purpose.

S. No.	Organism Name	Accession No.	Quantity
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Note: Any IPR generated /technologies developed should be brought in to the notice of NCDC and necessary approval may be obtained from the competent authority.

*In case of externally funded Project the charges for culture will be applicable as the cost of general category culture.

Cost of One NCDC Culture: Rs. 500/-

GST @ 12% on Cost of One Culture: Rs. 60/-

Total Cost of One NCDC Culture: 560/-

No. of Cultures Required:

Cost of - - - -Cultures:

GST Amount (@ 12%):

Total Cost of - - - - - Cultures:

Indented By

Received By

H.O.D.
(Concerned Division/section)

H.O.D.
DM Division

Incharge NCDC

Activation of freeze dried bacterial/lactic acid cultures

Carefully open the ampoule using aseptic techniques and activate the culture as given below:

- Prepare the skim milk tubes and flasks.
- For preparation of skim milk dissolve the skim milk powder @12.5% in distilled water (12.5gm skim milk powder in 100 ml distilled water).
- Prepare 3-4 skim milk tubes by distributing 5.0 ml of skim milks prepared in each test tube and 100 ml conical flasks.
- Seal the mouth of these milk tubes and flasks with cotton plug tightly and cover with paper. Keep these skim milk test tubes & flasks in an autoclave for sterilization.
- If autoclave is not available, keep this material in pressure cooker up to 3 Whistles and 15 minutes on low flame.
- After autoclaving, keep the material at room temperature for cooling and keep these materials in incubator at 37°C for overnight to check the sterility.
- For better sterilized conditions, the next step should be carried out preferably in a laminar air flow chamber. But if laminar air flow is not available, next steps should be carried out between two burners on the side.
- Mark a deep scratch above the content with the help of doctor's file/triangular file.
- Break open the ampoule by holding it with both hands and giving jerk in the opposite direction into the marked surface.
- By using a sterilized skim milk tube aseptically add 4-5 drops of sterilized milk/appropriate broth medium with the help of pasture pipette.
- Mix the content gently and then transfer the total content to 5 ml sterilized skim milk /broth medium.
- Incubate the inoculated milk/ broth tube at 14-16 hours at 30 C for mesophilic cultures and at 37C for the thermophilic cultures. For yoghurt culture incubate at 42C for 4hours.
- Activate the culture by transferring it into sterilized skim milk flask /appropriate broth @ 1-2% (1-2 ml culture in 100 ml skim milk flask).
- If it is for making dahi/ Yoghurt, culture can be used for preparation of curd/ yoghurt on large scale by further subculturing (transfer of culture @1-2% from already settled curd in another conical flask containing milk).
- Store the activated cultures in the refrigerator at 4°C. Dairy cultures can maintain in litmus milk plus chalk by repeated subculturing at 2-3 months. Non – lactic may maintained by repeated subculturing on appropriate agar slopes.
- Given proper treatment and growth conditions most freeze- dried cultures may grow in 3 days. However, some freeze-dried culture may exhibit a prolong lag period and therefore should be incubated for 4-5 days before discarding as unviable.

NOTE: It is presumed that the cultures will be handled at the user's end by trained person(s) competent in microbiological techniques

Activation of freeze dried yeast and mould cultures

Carefully open the ampoule using aseptic techniques and activate the culture as given below:

- Prepare the Potato dextrose Broth/Yeast Peptone Dextrose Broth tubes and agar media and autoclave it.
- Decrease the pH of broth and agar media (3.5-4.0pH) by adding prepared sterilized tartaric acid (10%).
- If autoclave is not available, keep this material in pressure cooker up to 3Whistles and 15 minute on low flame.
- After autoclaving keep the material at room temperature or cooling and keep these materials in incubator at 30°C for two days to check the sterility.
- The next step should be carried out in a Biosafety cabinet/ laminar air flow chamber.
- Mark a deep scratch above the content with the help of doctor's file/triangular file.
- Break open the ampoule by holding it with both hands and giving a jerk in the opposite direction to the marked surface.
- By using a sterilized broth tube aseptically add 4-5 drops of sterilized broth medium with the help of pasture pipette.
- Mix the content gently and then transfer the total content to 5 ml sterilized broth medium.
- Incubate the inoculated broth tube for 2-3 days at 30°C.
- After the visual turbidity in the broth tubes spread/streak the culture on prepared agar plates according to use.
- Incubate the streaked/spreaded plates at 30°C for 2-3days. After incubation store at 4°C.
- Reactivate these plates after every 10days.
- Given proper treatment and growth conditions most freeze- dried cultures may grow in 3 days. However, some freeze-dried culture may exhibit a prolong lag period and therefore should be incubated for 4-5 days before discarding as unviable.

NOTE: It is presumed that the cultures will be handled at the user's end by trained person(s) competent in microbiological techniques.

Activation of freeze dried anaerobic cultures

Carefully open the ampoule using aseptic techniques and activate the culture as given below:

- Prepare the Broth tubes specific to the culture.
- Keep these broth tubes in an autoclave for sterilization.
- If autoclave is not available, keep this material in pressure cooker up to 3 Whistles and 15 minute on low flame.
- After autoclaving, keep the material at room temperature for cooling and keep these materials in incubator at 37°C for overnight to check the sterility.
- For better sterilized conditions, the next step should be carried out in a Biosafety cabinet.
- Mark a deep scratch above the content with the help of doctor's file/triangular file.
- Break open the ampoule by holding it with both hands and giving jerk in the opposite direction to the marked surface.
- By using a sterilized broth tube aseptically add 4-5 drops of sterilized broth medium with the help of pasture pipette.
- Mix the content gently and then transfer the total content to 5 ml sterilized broth medium.
- Incubate the inoculated broth tube at 24-48 h or longer (turbidity due to growth of culture appears) at 37°C in anaerobic jar with gas packs.
- After visible turbidity activate the culture by subculturing in specific media tubes under the same conditions.
- Store the activated cultures in the refrigerator at 4°C.
- Given proper treatment and growth conditions most freeze-dried cultures may grow in 3 days. However, some freeze-dried culture may exhibit a prolong lag period and therefore should be incubated for 4-5 days before discarding as unviable.

NOTE: It is presumed that the cultures will be handled at the user's end by trained person(s) competent in microbiological techniques.

