



Fakultas Farmasi  
Universitas Airlangga

# Biomaterial & Translational Research Group

2024

# Introduction

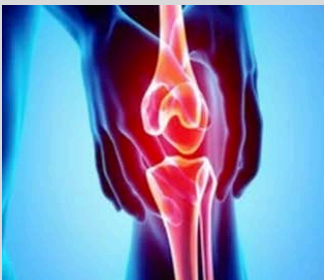
Until now, 90% of medicinal raw materials are still imported, even though raw materials are available in abundance in Indonesia. So now the government is making regulations to accelerate the availability of local raw materials.

In addition, there is a large amount of research reaching TRL 7-8 which is ready to be downstream, and a large captive market with a large number of pharmaceutical industries in Indonesia (210). Therefore the Biomaterials and Translational Research Group was formed with the aim of translating research products from bench to bedside.

Biomaterials and Translational RG conduct strong basic, molecular and translational research in support of the mechanism of action as an evidence base for clinical use "from bench to bedside

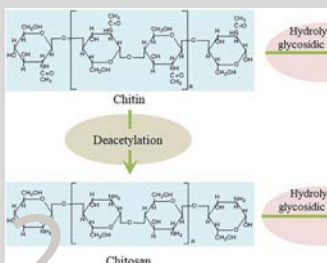


## Projects



Production of natural hydroxyapatite and its application in bone and dental implants

Production of allergen extracts and their use in allergy diagnostic kits and allergy desensitization



Glucosamine Production

# Vission

Become a center for research and product-downstream of standardized pharmaceutical biomaterials

# Mission

1. Conduct research on the development of biomaterials into products
2. Develop effective learning based on biomaterial projects
3. Develop collaboration with the pharmaceutical and medical devices industry



# Research Grants

1. Hibah penelitian RISPRO-LPDP (2019-2022)
2. Hibah Penelitian PDUPT Kemendikbudristek 2021-2022
3. Hibah Penelitian PTUPT Kemendikbudristek 2021-2024
4. Hibah Penelitian PPS-PMDSU (1 project) 2020-2022
5. Pendanaan Matching Fund 2023
6. Hibah Penelitian PPS-PMDSU (2 projects) 2022-2024
7. etc.

**With Total > 4 Billion Rupiahs**

Year	Research accepted
2019-2022	Riset Inovasi Produktif (RISPRO): Industrialisasi Bovin Hidroksiapatit sebagai Bahan Baku Biokompatibel Bonegraft
2020-2021	Karakterisasi 3-D Printing BHA-GEL-Alendronat dalam Polylaktic acid (PLA)
2021	Analisis Uji Radiologi, immunohistokimia, dan Histopatologi pada Scaffold Gelatin-Chitosan-Diklofenak Sebagai Pengganti Kartilago dan Penghambat Inflamasi Osteoarthritis
2022-2024	Efektivitas dan Toksisitas Dermal Gel Niosom Ekstrak Alergen Indonesian House Dust Mites pada Mencit Model Rhinitis Alergi
2022-2024	Evaluasi Efektivitas dan Keamanan pada Desensitisasi Shrimp Allergenic Extract pada Mencit Model Gastro Food Allergy
2023	Produksi Patch Diagnostik Alergi dan Agen Immunoterapi Non-Invasif dalam Mendorong Kemandirian Alat Kesehatan dan Sediaan Farmasi Nasional
2024	Inovasi Produksi dan Karakterisasi Formula Kapsul Bhagelvid sebagai Suplemen Kalsium Tubuh
2024	Inovasi Formula dan Karakterisasi Kapsul Bhageltin Plus sebagai Suplemen Makanan untuk Memelihara Kesehatan Fungsi Sendi dan Tulang
2024	Fabrikasi dan Karakterisasi Pasta Gigi Berbasis Bovine Hydroxyapatite (BHA) dengan Kombinasi Ekstrak Siwak (Salvadora persica)



# Publications

1. Toetik Aryani, **Aniek Setiya Budiatin**, Samirah, Aulia Maulidina, Aulia Intan Firdaus, Maria Apriliani Gani, Khoirotin Nisak, **Junaidi Khotib** and Alvi Jauharotus Syukriya. 2023. The Administration of Bovine Hydroxyapatite-Alendronate Implant Accelerates Bone Defect Healing in an Osteoporotic Rat. *Technology and Health Care* 31
2. Maria Apriliani Gani, **Aniek Setiya Budiatin**, **Dewi Wara Shinta**, Chismawan Ardianto, **Junaidi Khotib**. 2023. Bovine hydroxyapatite-based scaffold accelerated the inflammatory phase and bone growth in rats with bone defect. *Journal of Applied Biomaterials & Functional Materials*, 21.
3. Nurul Fitriani, **Aniek Setiya Budiatin**, Esti Hendradi. 2023. Genipin as a Cross-linker in a Ciprofloxacin Delivery System Containing a Bovine Hydroxyapatite-Collagen Composite for Bone Infections. *Journal of Tropical Pharmacy and Chemistry*, 7(1)
4. **Yusuf Alif Pratama**, Honey Dzikry Marhaeny, Lutfiatur Rohmah, Salsabilla Madudari Kasatu, Ahmad Dzulfikri Nurhan, Mahardian Rahmadi, **Junaidi Khotib**. 2023. The optimisation and standardisation of Indonesian house dust mites allergenic extract as a desensitising agent. *Pharmacy Education*
5. Ilham Bagus Sagitaras, Honey Dzikri Marhaeny, **Yusuf Alif Pratama**, Chismawan Ardianto, Dian Suasana, Ahmad Dzulfikri Nurhan, Winda Fatma Sari, Fakhriyah Dinina, Muhammad Taher, **Junaidi Khotib**. 2023. Effectiveness of shrimp allergenic extract as an immunotherapy agent in mice model of gastrointestinal allergy. *Research Journal of Pharmacy and Technology*, 16 (1)
6. **Aniek Setiya Budiatin**, **Yusuf Alif Pratama**, Winda Fatma Sari, Mahardian Rahmadi, Muhammad Taher, Zainul Amiruddin Zakaria, **Junaidi Khotib**. 2022. Acute and Subchronic Toxicity of Indonesian House Dust Mites (IHDM) Allergenic Extract for Asthma Allergy Immunotherapy, *Jurnal Farmasi dan Ilmu Kefarmasian Indonesia*, 9(2)
7. **Yusuf Alif Pratama**, Fakhriyah Dinina, Ahmad Dzulfikri Nurhan, Winda Fatma Sari, Chismawan Ardianto, **Junaidi Khotib**. 2022. Effectiveness of Indonesian house dust mite allergenic extract in triggering allergic rhinitis sensitivity in a mouse model: A preliminary study. *Veterinary World*, 15(9)
8. Mochamad Lazuardi, Qonita Kurnia Anjani, **Aniek Setiya Budiatin**, Tjuk Imam Restiadi. 2024. Efficacy of quercetin-like compounds from the mistletoe plant of *Dendrophthoe pentandra* L. Miq, as oral random blood sugar lowering treatment in diabetic rats. *Veterinary Quarterly*, Vol. 44
9. **Samirah**, Nadea Kalila Yasmin, **Aniek Setiya Budiatin**, Dinda Motika Nusantara Ratri, Ani Nurul Fauziyah, Toetik Aryani, **Dewi Wara Shinta**. 2024. Mechanical characterisation of polylactic acidalendronate bioscrew in different concentrations of glutaraldehyde. *Pharmacy Education*, 24 (3)



# Patents

Patent / HAKI	Year	Type
Komposisi, Proses Pembuatan Scaffold Dari Chitosan-Gelatin Tulang Sapi sebagai pengganti Kartilago dan Pembawa Diklofenak	2021	Granted Paten
Proses Produksi, Ekstraksi Bovin Hidroksiapatit dari Femur Tulang Sapi	2021	Paten
Proses Ekstraksi dan Standarisasi Ekstrak Alergen Indonesian House Dust Mites (IHDM)	2022	Submitted
Proses Ekstraksi Tropomisoin Udang sebagai Bahan Baku Ekstrak Alergen	2022	Submitted

\* Many more

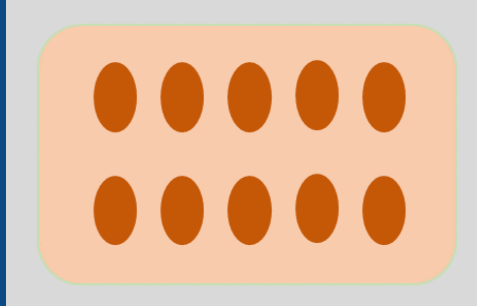
# Our Facility



**Teaching Industry  
Bovine Hydroxyapatite and Allergenic Extract  
Supported by Many Advanced Laboratories**

# Products

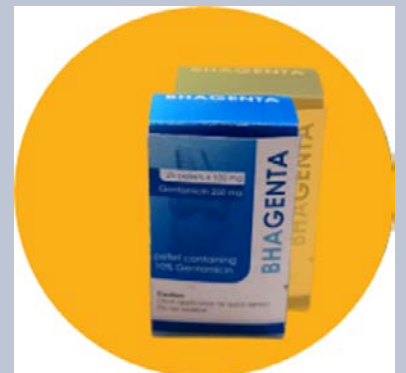
## Diagnostic kit containing 10 allergen extracts



## Sublingual Tablet for desensitization

(Allergen-specific  
immunotherapy)

## Hydroxyapatite products (Bhanex, Bhagenta)



# Our Team

Head:

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## Research Collaboration

### Industry Partner



### Government Partner



### University Partner



### Hospital Partner

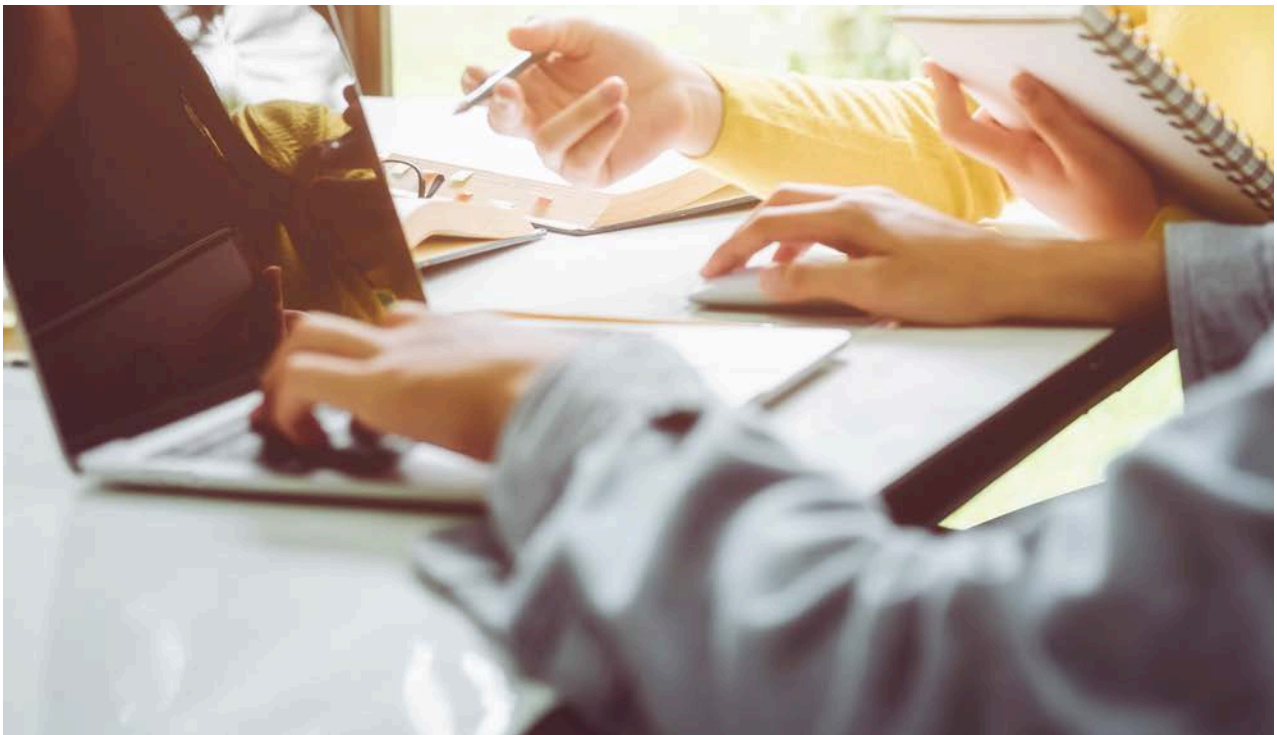


### Community Partner





# Questions? Contact us.



**Biomaterial  
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