

**Facts and Figures, Clusters in Schleswig-Holstein (SH) and Hamburg (HH)  
Life Science Cluster (LSC) and Health Sector (H)**

Subject	Comments	Facts and figures
Cluster focus		Life Science 1 (LSC1): Medical engineering, innovative medicine; Life Science 2 (LSC2): Pharmaceutical chemistry, medical ("red") biotechnologie
Type of network	Network, cluster, competence centre	Cluster
Clustertype (I)	Technological, innovative, tertiary	LSC1, LSC2: technological, innovative, knowledge based cluster
Clustertype (II)	Industry, product, technology, value added chain	Overall view: value added chain („Life Science Shipyard“), ending with health sector (H): medical and rehab centres, wellness. H itself (tertiary, high-skilled field) is no cluster, as it is characterized by competition and not by cooperation.
Clustertype (III)	Working, growing, emerging, as vision	Working, growing
Common ground		LSC: Medical engineering, innovative medicine and pharma, H: health and rehab sector as user/consumer
Industries involved		LSC1: medical and orthopedic engineering LSC2: pharmaceuticals, red biotechnology H: Health sector Broad view: core area is health care service, plus health care industries, and marginal areas (e.g. health tourism)
Technologies		Medical technology, pharma (pharmaceutical chemistry), biotech (medical „red“ biotechnology), blue biotechnology (maritime technologies in medical and pharmaceutical science), white biotechnology (pharmaceutical raw materials), other cross-sectional technologies
Innovation, patents		High level of patents in „medical compounds“ , „pharma“ (especially in HH) and in „health sector“ (in SH) Hamburg is on 3rd position (over all German cities) in patent intensity
Application areas		Medical therapy and diagnose (onkology, infections, inflammations), laboratory equipment, implantology, surgery technique
Science and qualification		Medical study, nutrition science, physical science, engineering science
Adjoining or overlapping clusters		Tourism, micro- /nano-technology cluster, food industry cluster
Specialization in SH und HH		LSC1: SH and HH LSC2: SH (south of SH) H: SH Specialization on LSC+H – SH has rank 1 over all German Länder, Medical engineering: SH rank 2 (HH rank 4) Pharma: SH rank 3
More on specialization	R&D fields	Neurologic diseases, neurobiology, preserved interventions, pharmaceutical screening, oncology, inflammation and infection research, molecular imaging and diagnose, metabolism physiology, ageing research. Excellence-initiative: Inflammables at interfaces (Kiel and Lübeck University, Research Centre Borstel)
Cluster-management	networking, cluster promotion	Norgenta (Lübeck/Hamburg): North German Life Science Agency, management for SH and HH, since 2004)
	Other cluster promoting and network supporting organizations	WTSH (Business Development and Technology Transfer Corporation Schleswig-Holstein): coordination for biotechnology and life science in SH Innovationsstiftung Hamburg and Schleswig-Holstein AGMT (consortium for medical engineering SH)

		Bay-to-Bio (Promotion for Life Science), founded by SH and HH Ministry of Economics in SH Chambers of Commerce (SH, HH)
Main cluster agents for a complete cluster	Key enterprises	LSC1: Dräger Medical (Lübeck, 3.700 employees), Philips Healthcare (HH), Olympus Winter & Ibe (HH), Stryker Trauma (Kiel) LS2: Eppendorf AG (HH), Ferring (Kiel), Richter-Helm (HH), Evotec (HH), AstraZeneca (Wedel) H: Clinical Centres in Kiel, Lübeck, HH, Damp Clinical Centre (SH), Asklepios Clinics (HH) Segeberg Clinics (SH) ISG Intermed (hospital and surgery requirements, Geesthacht near HH)
	Qualification institutions	University of Kiel (Medical Faculty), Medical University of Lübeck (selected master courses) Polytechnic Lübeck (Medical Technology) Polytechnics in Kiel, Flensburg, Hamburg Technical University HH (Harburg) UHH Techn. Universität HH-Harburg Helmut-Schmidt-University (HH) Qualification Center "Life Science Hamburg" (QZSL) Academie for hearing aid research (Lübeck) Fielmann Academie (Plön) (ophtalmic optics) <u>New ideas:</u> Binational courses (Germany, Denmark) Life Science practical courses in schools
	R&D (University level)	Clinical Centres in Lübeck, Kiel, Eppendorf (HH) Center for Molecular Neurobiology (Uni HH) Center for Biochemistry and Molecular Biology (Uni Kiel) NRoCK Kiel (North European Radiooncological Center Kiel (Kiel University), from 2012 Institute for Medical Engineering, University Lübeck
	R&D (research institutions)	Research Center Borstel (SH) DESY Elektrons-Synchrotron (x-ray laser) (HH) Max-Planck-Group for molecular biology at DESY Heinrich-Pette Institute (HH) Bernhard Nocht Institute (tropical medicine, HH) EMB Fraunhofer Research Institute for Marine Biotechnology (Lübeck) Fraunhofer Institute for Silicon Technology (ISIT)(Itzehoe)
	targeted business- and financial services	MAZ Level One (HH), Health Insurance Institutions, particularly "Techniker Krankenkasse", Financing, funding: special credit institutions, as HSH Nordbank, HASPA,...
	Complementary firms (examples)	A variety of small and medium sized firms, e.g. Möller-Wedel, Söring, Euroimmun, Nordmark Pharma,
High skilled labour force		Scientific workforce at universities: above average in Kiel, Lübeck (and Hamburg)
Cluster size: Employees and number of firms		LSC1: satisfied, LSC2: satisfied, particularly in SH Employees: LSC1/LSC2: SH 14 Tsd. / HH 6 Tsd. H: SH 65 Tsd. / HH 46 Tsd. Firm number: LSC1/LSC2: SH: 190 firms / HH 170 firms Other employment figures: LSC1+LSC2: SH 16 Tsd., SH+HH 25 Tsd. (460 firms) H: 118 Tsd. (SH) SH+HH: 500 firms in LSC1/LSC2/H
Cluster size: Turnover in medical engineering		Medical engineering: In 2007 only Bayern (turnover: 5,2 bn. Euro) and Baden-Württemberg (4,2 bn.) exceeded the turnover position of SH and HH (2,7 bn.) in Germany. MVP had only an inferior position. Within the EU, Germany is in

		the lead (turnover of 16,9 bn. Euro in 2005) followed by France (7,2 bn.), Italy (6,1 bn.), UK (5,0 bn.) and Ireland (5,0 bn.).
Regional focus		Generally statewide, predominatly in densely populated areas, main focus rather on SH than on HH LSC1, LSC2: Lübeck, south of SH (Pharma), districts of Ostholstein und Plön (Medical engineering) HH: focus on medical engineering Health: statewide, emphasis in Kiel, Lübeck and Ostholstein (Baltic Sea coastline) Cooperation Kiel vs Lübeck: a mix of competition and cooperation
Regional significance		major (Regions Lübeck, Kiel, south of SH, HH)
Regional identification		Identification is present in Lübeck and Kiel, but not as strong as for the maritime industry Competitive situation between the Kiel-Lübeck health institutions Hamburg and hinterland: not very distinctive
Competitive situation		Strong competition between medical/biotechnological clusters in Germany and Europe
Prospects, Persistence		Positive (demographic trend) Forecast (IAT-Institute):+22 Tsd. employees in SH within the next 15 years Necessity: stronger linkage between the technological field, the health economy and health insurances
External relations		Expansion of SH+HH region to a leading European LSC-Region <b>ScanBalt:</b> Life Science-Metacluster in Baltic Sea region 63 Universities, 870 firms, 60 Tsd. Employees (Norgenta as formation organization) <b>Medicon Valley (Öresund):</b> gateway to the Scandinavian LCS-market, one of the strongest LSC clusters across Europe, to date: cooperation agreement, intensive and lively cooperations, common meetings, events and fairs. <b>BioConValley:</b> Cooperation (Norgenta) with life science cluster in Mecklenburg-Vorpommern, SH, HH, MVP: common overseas marketing. Particular excellence in medical engineering and marine Biotechnology. BioConValley is a member of ScanBalt.
Relationships to other parts of the Femern region		<b>Life Science Nord and Medicon Valley (Öresund)</b> – see above. The alliance of the two clusters is beneficial due to geographical contiguity and complementary characteristics (In Germany medical engineering is dominant and in Denmark/Sweden biotechnology), particularly in association with their strong health sector. Consequence would be a mega-cluster in the European top group. Ambition: division of labour in health care across the Femern Belt region (specialized hospitals), „patient bridge”, providing medical care to patients from Denmark in Germany and v.v.; Offers of health tourism to Danes/Swedes
Further comments		In the IHK report (source 2) the Life Science Cluster gained the best evaluation of all clusters in SH and HH Several successful participations in contest for German subsidies
Interviews (p=personally)	Katrin Adlkofer (p) Stefan Lemke (p)	Norgenta (North German Life Science Agency), Dr. Katrin Adlkofer, Ministry of Economics SH, Stefan Lemke
Sources	Reports and internet information	Sources (see list): 1, 2, 3, 4, 11, 14, 15.